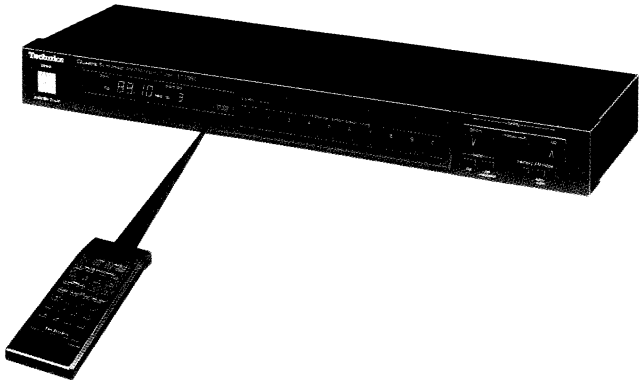
ORDER NO.AD8806103C8

Service Manual

Tuner

QUARTZ Synthesizer
AM/FM Stereo Tuner

ST-Z980



Color

(K).....Black Type

Area

Color	Area
(K)	(EX).....Continental Europe.
(K)	(EH).....Holland.
(K)	(EI).....Italy.
(K)	(XA).....Asia,Latin America Middle Near East, Africa & Oceania.
(K)	(XL).....Australia.

SPECIFICATIONS(DIN 45 500)

■ FM TUNER SECTION

Frequency range	87.50 ~ 108.00 MHz (50 kHz-steps)
Sensitivity	1.5 µV (IHF, usable)
S/N 30 dB	1.3 µV (75Ω)
S/N 26 dB	1.2 µV (75Ω)
S/N 20 dB	0.9 µV (75Ω)
IHF 46 dB stereo quieting sensitivity	28 µV / 75Ω
Total harmonic distortion	
MONO	0.15%
STEREO	0.3%
S/N	
MONO	70 dB (78 dB,IHF)
STEREO	65 dB (71 dB,IHF)
Frequency response	20 Hz ~ 15 kHz, +0.5 dB ~ -1.5 dB
Alternate channel selectivity	
±400 kHz	65 dB
Capture ratio	1.0 dB
Image rejection at 98 MHz	40 dB
IF rejection at 98 MHz	70 dB
Spurious response rejection at 98 MHz	70 dB
AM suppression	55 dB
Stereo separation	
1 kHz	40 dB
10 kHz	30 dB
Carrier leak	
19 kHz	-30 dB (-35 dB,IHF)
38 kHz	-45 dB (-50 dB,IHF)
Channel balance (250 Hz ~ 6,300 Hz)	± 1.5 dB
Limiting point	1.2 µV
Bandwidth	
IF amplifier	180 kHz
FM demodulator	1000 kHz
Antenna terminals	75Ω (unbalanced)

■ AM TUNER SECTION

Frequency range	
	522 kHz ~ 1611 kHz (9 kHz-steps)
	530 kHz ~ 1620 kHz (10 kHz-steps)
Sensitivity (S/N 20 dB)	20 µV,300 µV/m
Selectivity at 999 kHz(± 9 kHz)	50 dB
Image rejection at 999 kHz	40 dB
IF rejection at 999 kHz	60 dB

■ GENERAL

Output voltage	0.3V (0.6V,IHF)
Power consumption	9W
Power supply	
For Australia	AC 50/60Hz, 240V
For Continental Europe	AC 50/60Hz, 220V
For others	AC 50/60Hz, 110V/127V/220V/240V
Dimensions (W x H x D)	430 x 53 x 150 mm (16-15/16″ x 2-3/32″ x 5-7/8″)
Weight	1.5 kg (3.3 lb.)

Notes:
Total harmonic distortion is measured by the digital spectrum analyzer (H.P.3045 system)

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Technics

Matsushita Electric Industrial Co., Ltd.
Central P.O. Box 288, Osaka 530-91, Japan

■ LOCATION OF CONTROLS

●Front panel

Power "standby ⏻/on" switch (power "standby ⏻/on")

This switch switches ON and OFF the secondary circuit power only. The unit is in the "standby" condition when this switch is set to the "standby ⏻" position. Regardless of the switch setting, the primary circuit is always "live" as long as the power cord is connected to an electrical outlet.

FM stereo indicator (stereo)

This indicator automatically illuminates when an FM stereo broadcast is being received.

Note:

It will not illuminate if the FM mode selector is set to the monaural mode.

Digital frequency display

Quartz-lock indicator (quartz lock)

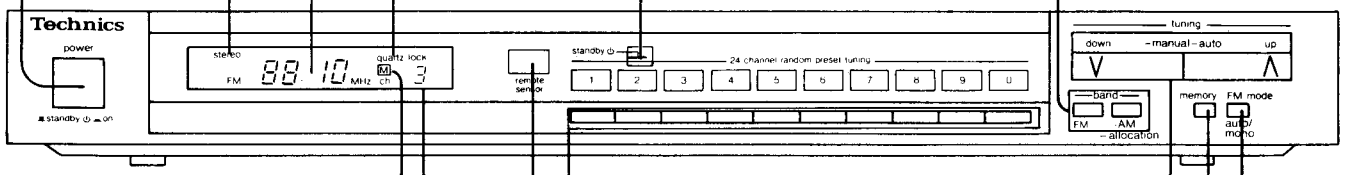
This indicator illuminates when tuned precisely to an FM or AM station.

"standby ⏻" indicator

This indicator will illuminate when the unit is switched to the standby condition by the power "standby ⏻/on" switch on the unit or the ON/OFF switch on the remote-control transmitter.

Band selectors (band)

FM: Press this button to listen to an FM broadcast.
AM: Press this button to listen to an AM broadcast.
allocation:
When the AM button is pressed for about 4 seconds, the AM frequency step will change to 10 kHz per step. (This step is set to 9 kHz before shipment.)
In order to return to the original frequency indication, press this button for about 4 seconds again.



Memory indicator (M)

This indicator illuminates when the memory button is pressed.

Channel display

The channel number selected by the preset-tuning buttons is displayed.

Remote-control signal receptor (remote sensor)

Receives the signals from the remote-control transmitter.

Preset-tuning buttons (24 channel random preset tuning)

These buttons are used to preset FM and AM broadcast frequencies into the memory of this unit, and are also pressed to select the desired preset frequencies.

Tuning buttons (tuning)

If the button is pressed momentarily and then released, the frequency will change at intervals of 0.05 MHz for FM and 9 kHz (or 10 kHz) for AM.
If the button is pressed slightly longer and then released, the station will be selected automatically. If the broadcast signals are weak, it may not be possible to make automatic selection. If this occurs, make the selection manually.

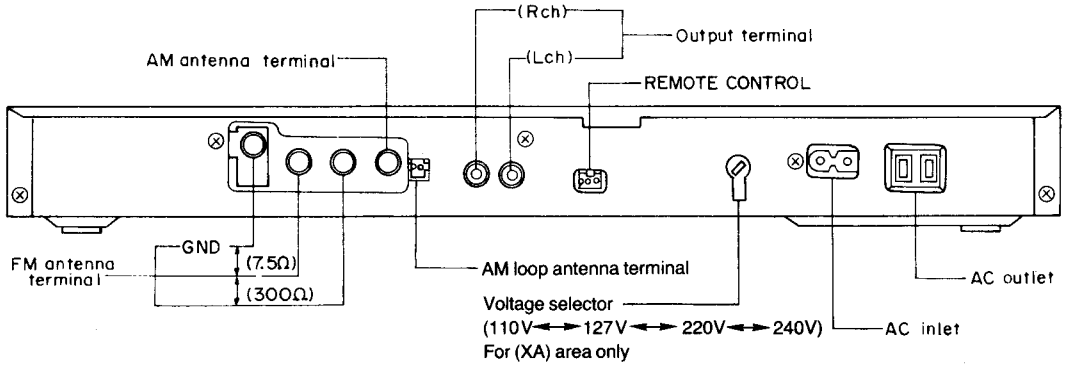
Memory button (memory)

This button is used when preset memory setting of the preset-tuning buttons is made.

FM mode selector (FM mode)

This unit automatically switches to the stereo mode when a stereo broadcast is received. Press this selector to listen in the monaural mode. The stereo indicator will not illuminate in the monaural mode.

●Rear panel



DEUTSCH

Tuner
ST-Z980

■ MESSUNGEN UND JUSTIERUNGEN

UKW JUSTIERUNGEN

Einstellungen der Bedienelemente und zu verwendende Geräte.

- UKW-Messender(UKW-MS)
- Stereo-Modulator
- Verzerrungs-Analystator
- Elektronische Gleichstrom-Voltmeter(EVM)
- Frequenzzähler
- Drosselspule(100μH)
- Widerstand(100kΩ)

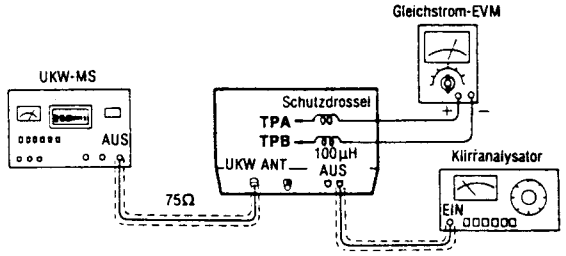
Anmerkung: Für Z202 und Z201 werden bereits justierte Ersatzteile geliefert. Die Kerne dieser Teile daher nicht drehen.

UKW-MONO-VERZERRUNGS-JUSTIERUNG

1.Der Testaufbau ist in der Abbildung gezeigt.
2.Stellen Sie die Einheit auf **"FM(UKW)"** Betrieb.
3.Die Radiofrequenzanzeige und den Messender auf **100.10MHz** einstellen.
4.Den Kern von **T201** so justieren, daß die im Signalzustand gemessene Spannung **0mV (0±20mV)** im 300mV-Bereich beträgt.
5.**T202** so justieren, daß der Verzerrungsfaktor des linken Kanals minimal wird.
6.Schritte 4 und 5 einige Male wiederholen.
7.Versichern Sie sich, daß die Verzerrungsfaktoren von Kanal L und Kanal R annähernd gleich sind und auf ein Minimum gehalten sind.

Anmerkung:
Für die Justierung ist ein Schraubendreher aus Kunststoff zu verwenden.

ZUSTAND DES UKW-MESSENDERS
Modulation 100%
Modulationsfrequenz 1kHz
Ausgangspegel 66dB



TPA = TP201 , TPB = TP202

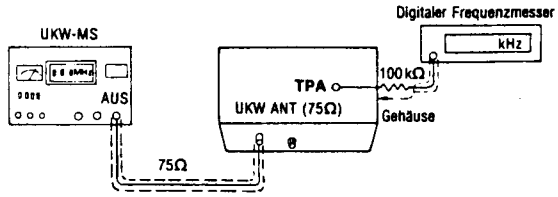
MPX-SGO-JUSTIERUNG

1.Der Testaufbau ist in der Abbildung gezeigt.
2.Den UKW-Bertriebsart-Wahlshalter in die **"on/auto"** Position stellen.
3.Radio und Meßsender auf **100.10MHz** einstellen.
4.**VR301** auf **19kHz ± 30Hz** auf der Frequenzzähleranzeige justieren.

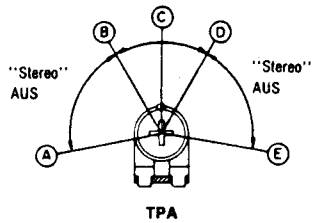
● VERWENDUNG EINES ALTERNATIVSYSTEMS

1.Stereosignal vom Meßsender eingeben oder eine Stereo-Sendung empfangen.
2.**VR301** justieren, bis die Stereo-Anzeige aufleuchtet. Den Arm von **VR301** mit Lack sichern, wie in der Abbildung gezeigt.

ZUSTAND DES UKW-MESSENDERS
Modulation 100%
Modulationsfrequenz 0kHz
Ausgangspegel 66dB



TPA = TP301



TPA

Ⓐ−Ⓑ,
Ⓓ−Ⓔ..... "Stereo" AUS Stellung
Ⓑ−Ⓓ..... "Stereo" EIN Stellung (Anzeigebeleuchtung)
Ⓒ..... Einstellpunkt des pilotschaltkreis'

TPA = VR301

FRANÇAIS

■ MEAURAGES ET REGLAGES

M.F. REGLAGES

Positionnements des commandes et équipement utilisé

- Générateur de signaux M.F.(FG-SG)
- Modulateur stéréophonique
- Analyseur de distorsion
- Voltmètre électronique à C.C. (EVM).
- Compteur de fréquence
- Bobine d'amortissement d'arrêt (100μH)
- Résistance (100KΩ)

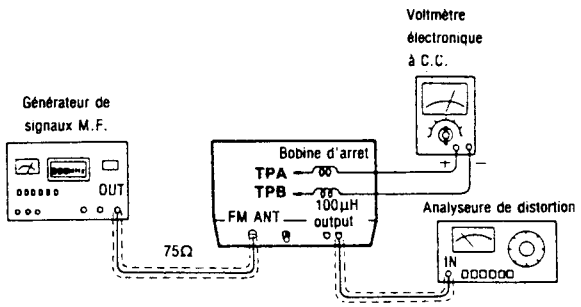
Nota: Pour Z201 et Z202 , ajuster les éléments qui sont fournis. Aussi, ne pas tourner les noyaux de ces éléments.

REGLAGE DE DISTORSION MONOPHONIQUE M.F.

1.Le raccordement de l'équipement d'essai est montré sur l'illustration.
2.Régler l'appareil sur le mode **"FM"**.
3.Ajuster le réglage de l'affichage de radiofréquence et du générateur de signaux sur **100.10MHz**.
4.Régler le noyau de **T201** de telle sorte que la tension mesurée sur le mode de signaux soit de **0mV (0mV ± 20mV)** dans une plage de 300mV.
5.Ajuster **T202** de telle que le facteur de sistorsion du canal de gauche soit minimisé.
6.Répéter les étapes 4 et 5 quelques fois.
7.S'assurer que les facteurs de distorsion du canal de gauche et du canal de droite soient sensiblement les mêmes et au minimum.

Nota: Le tournevis de réglage utilisé devra être fait en résines.

CONDITION DU GENERATEUR DE SIGNAUX M.F.
Modulation 100%
Fréquenz de modulation 1kHz
Niveau de sortie.....66dB



TPA = TP201 , TPB = TP202

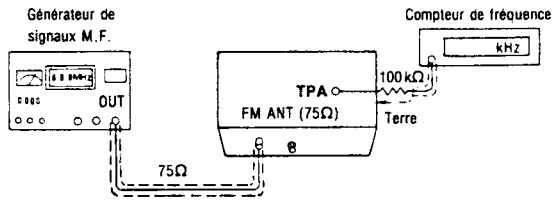
REGLAGE MULTIPLEX DE L'OSCILLATEUR COMMANDE PAR VARIATION DE TENSION

1.Le raccordement de l'équipement d'essai est montré sur la figure.
2.Régler l'appareil sur la position **"on/auto"**.
3.Régler le cadran radio et le générateur de signaux sur **100.10MHz**.
4.Ajuster **VR301** pour **19kHz ± 30Hz** sur le compteur de lecture de fréquences.

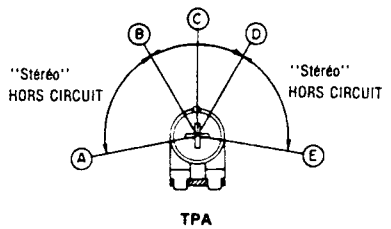
● EN UTILISANT UN SYSTEME ALTERNATIF

1.Applique un signal stéréo à partir du générateur ou recevoir une émission stéréo.
2.Ajuster **VR301** jusqu' à ce que l'indicateur stéréo s éclaire. Coller le bras de **VR301** comme il montré sur la figure.

CONDITION DU GENERATEUR DE SIGNAUX M.F.
Modulation 100%
Fréquenz de modulation 0kHz
Niveau de sortie.....66dB



TPA = TP301



TPA

Ⓐ−Ⓑ,
Ⓓ−Ⓔ..... Position de HORS CIRCUIT "Stereo".
Ⓑ−Ⓓ..... Position de MISE EN CIRCUIT "Stereo". (Eciairage de l'indicateur)
Ⓒ..... Point de réglage du circuit pilote.

TPA = VR301

ESPAÑOL

■ MEDICIONES Y AJUSTES

FM AJUSTES

Posiciones de control y equipo usado

- Generador de señales de FM(FM-SG)
- Modulador estéreo
- Analizador de distorsiones
- Voltímetro electrónico de CC(EVM)
- Frecuencímetro
- Bobina de choque(100μH)
- Resistor(100kΩ)

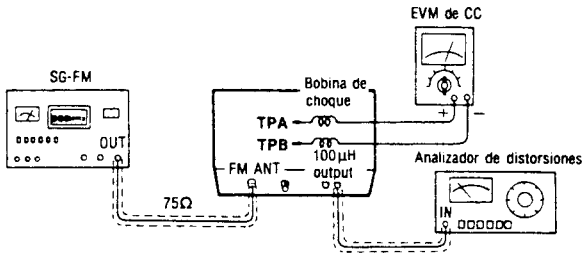
Nota: Para Z201 y Z202 , se suministran piezas ajustadas. Por lo tanto, no cambie los núcleos de estas piezas.

AJUSTE DE DISTORSION MONO FM

1.La conexión del equipo de pruebas se muestra en la figura.
2.Poner la unidad en modalidad de **"FM"**.
3.Poner la puesta de la presentación de radiofrecuencia y generador de señales a **100,10MHz.**
4.Ajustar el núcleo de **T201** de manera que el voltaje medido en modalidad de señal sea **0mV (0±20mV).**
5.Ajustar **T202** de manera que el factor de distorsión de CH-I se minimice.
6.Repetir los pasos 4 y 5 algunas veces.
7.Asegurarse de que los factores de distorsión de CH-I y CH-D sean casi los mismos y los mínimos.

Nota:
El destornillador de ajuste usado debe estar hecho de resina.

CONDICION DE GENERADOR DE SEÑALES DE FM
Modulación 100%
Frecuencia de modulación 1kHz
Nivel de salida 66dB



TPA = TP201 , TPB = TP202

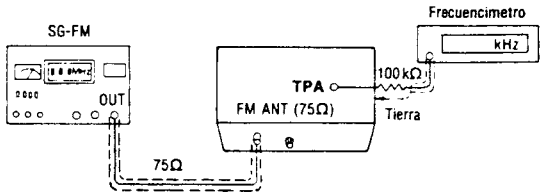
AJUSTE DE MPX VCO(OSCILADOR CONTROLADO POR VOLTAJE MPX)

1.La conexión del equipo de pruebas se muestra en la figura.
2.Poner la unidad en la posición de **"on/auto"**.
3.Poner la presentación de la radio y la puesta del generador de señales en **100.10MHz.**
4.Ajustar **VR301** para **19kHz±30Hz** en lectura de frecuencímetro.

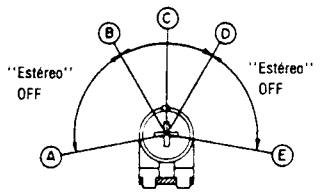
* USANDO SISTEMA ALTERNATIVO

1.Aplicar señal estereofónica del generador o recibir la emisión estereofónica.
2.Ajustar **VR301** hasta que la presentacón de estéro se encienda. Fijar el brazo de **VR301** como se muestra en la figura.

CONDICION DE GENERADOR DE SEÑALES DE FM
Modulación 100%
Frecuencia de modulación 0kHz
Nivel de salida 66dB



TPA = TP301



TPA

Ⓐ－Ⓑ,
Ⓓ－Ⓔ..... Pósición de "estéreo" OFF.
Ⓑ－Ⓓ..... Pósición de "estéreo" ON. (indicador encendido)
Ⓒ..... Punto de ajuste de circuito piloto.

TPA = VR301

Printed in Japan
F880600800 TW

●Remote control transmitter

EUR64759...For (XL) area only
EUR64758...For others

For remote-control operation, be sure to connect the remote-control cords and/or flat cables, etc. included with each component correctly.

Power controls

Except (XL) area.

Cassette deck controls

(For Technics tape decks with a proper remote-control terminal only.)

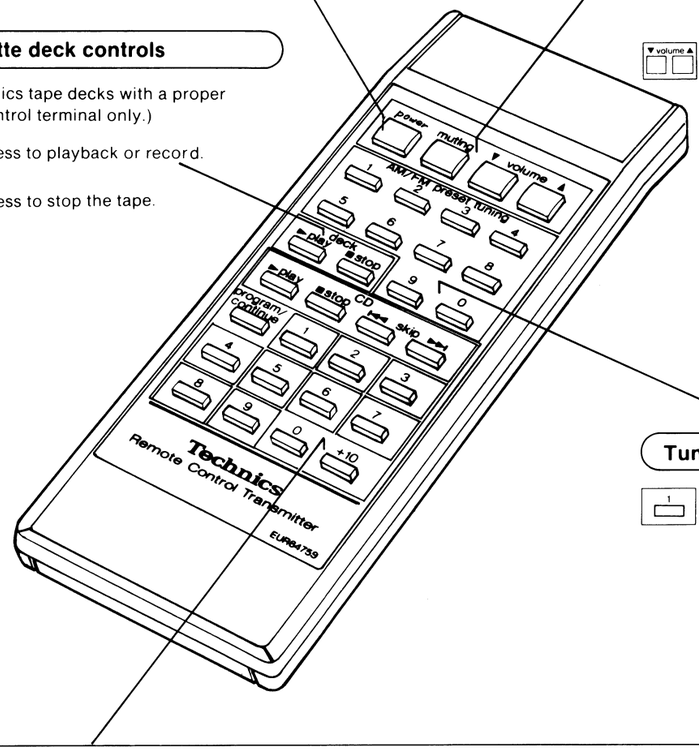
play — Press to playback or record.

stop — Press to stop the tape.

Amplifier controls

muting — Press this button to temporarily reduce the volume level. The volume level is attenuated by 20 dB. (approx. 1/10) Press once again to return to the previous volume level.

volume ▼▲ — Adjust the volume level. (The volume level is indicated by the volume/balance level indicator on the amplifier.)



Tuner controls

1 ~ 0 — Press to select a preset "channel".

Compact disc player controls

(For Technics compact disc player with the remote-control receptor or terminal only. Consult your dealer for details. Refer to the operating instructions of compact disc player.)

play — Press to start disc play.
Note:
If the compact disc player has the "play/pause", pressing it again activates pause mode.

stop — Press to stop disc play.

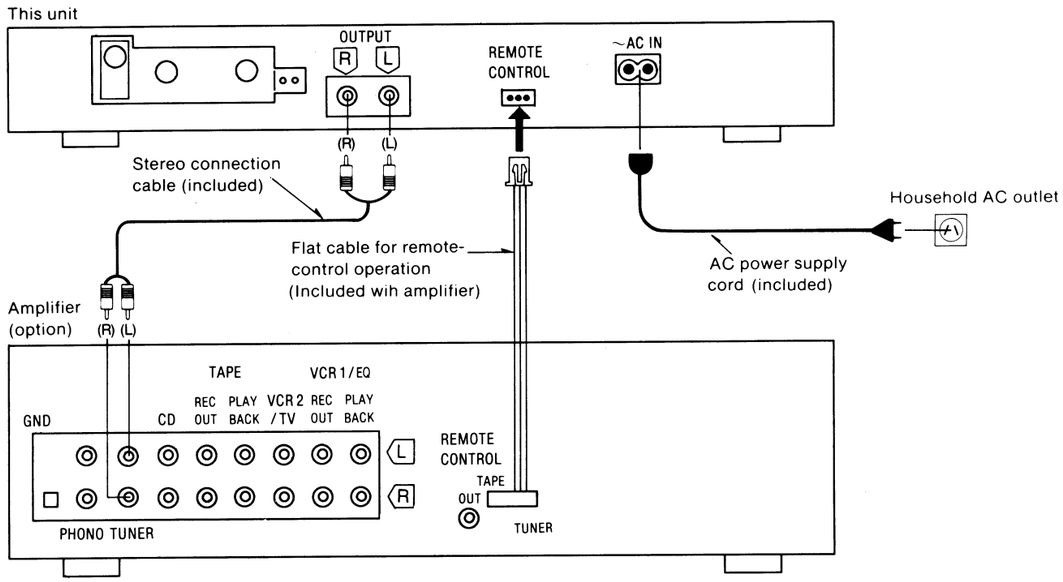
skip — Press to select the desired track.
(⏮: for backward ⏭: for forward)

program/ continue — Press to select the desired play mode.
("program" or "continue")

1 ~ +10 — These buttons can be used to select track number and preset-edit play time.
These buttons can also be used instead of the forward and backward skip buttons by entering the desired track number.

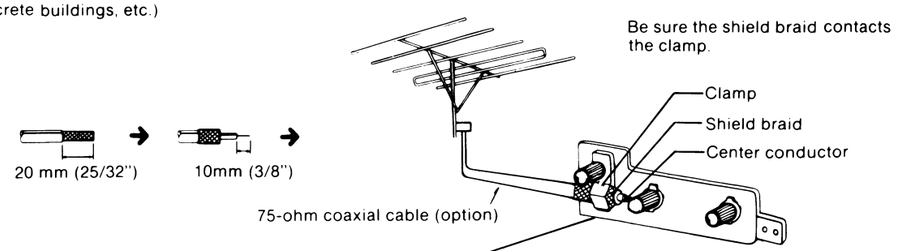
Note:
To select a track numberd 10 or higher in the direct access play or program play mode, first press the "+10" button the necessary number of times and then press the appropriate "numeric button".

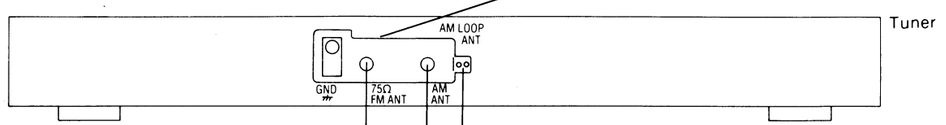
■ CONNECTIONS



FM outdoor antenna (option)

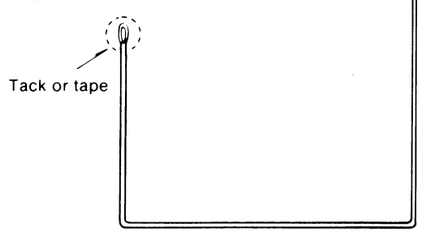
(Necessary in mountainous regions, inside reinforced-concrete buildings, etc.)



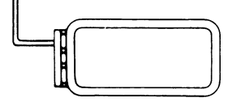


FM indoor antenna (included)

- Attach to a wall (using tack or tape) facing in direction of best reception.
- Tack should not contact internal antenna wire.
- For best reception sound quality, an FM outdoor antenna is recommended.
- Disconnect this antenna if an FM outdoor antenna is installed.

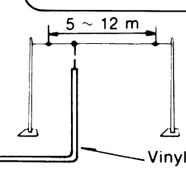


AM loop antenna (included)



After finding the best reception position for the antenna, fix it to a wall, the rack, or the amplifier, etc.
Note:
If this antenna is not properly installed, AM broadcasts will not be received.
Be sure to connect the AM loop antenna even when an outdoor antenna is used.

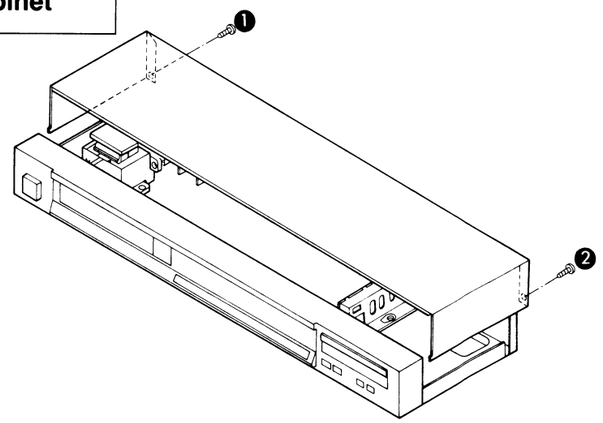
AM outdoor antenna (option)



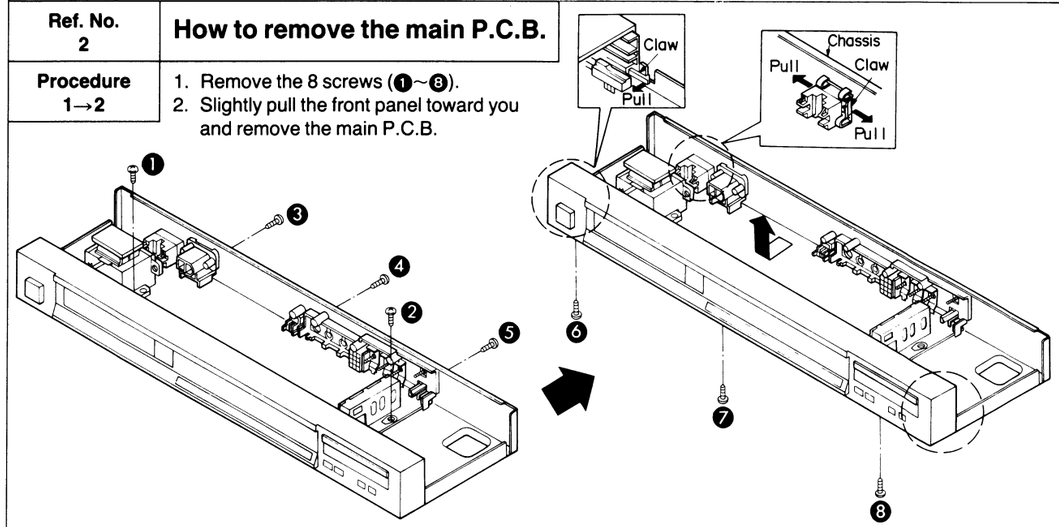
(Necessary in mountainous regions, inside reinforced-concrete buildings, etc.)
Use 5 ~ 12 m (16 ~ 40 ft.) of vinyl-covered wire horizontally at the window.

■ DISASSEMBLY INSTRUCTIONS

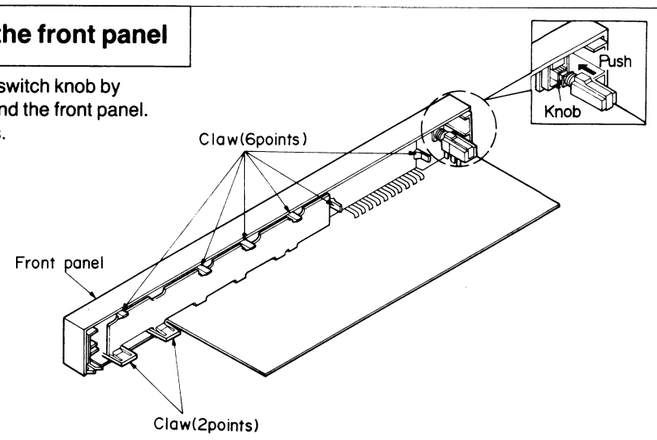
Ref. No. 1	How to remove the cabinet
Procedure 1	•Remove the 2 screws (❶, ❷).



Ref. No. 2	How to remove the main P.C.B.
Procedure 1→2	1. Remove the 8 screws (❶~❽). 2. Slightly pull the front panel toward you and remove the main P.C.B.

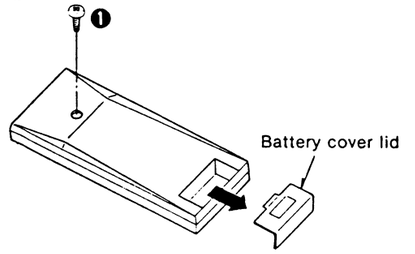


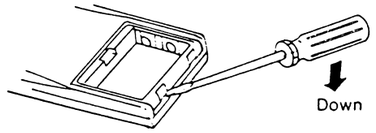
Ref. No. 3	How to remove the front panel
Procedure 1→2→3	1. Remove the power switch knob by pushing it from behind the front panel. 2. Release the 8 claws.



"ATTENTION SERVICER"
Some chassis components may have sharp edges. Be careful when disassembling and servicing.

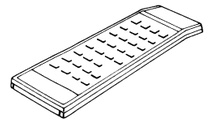
Ref. No. 4	How to remove the remote control
Procedure 4	1. Remove the battery cover lid. 2. Remove the one screw (❶). 3. Insert a screwdriver blade between the upper and lower covers inside the battery compartment and them slowly loosen the bottom cover.





■ ACCESSORIES

- Remote-control transmitter 1
  (EUR64759)...For (XL) only
  (EUR64758)...For others

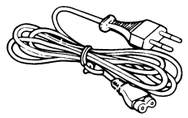


- Batteries 2
  (UM-4NEP)

- FM indoor antenna 1
  (SSA269M)...For (XL) and (XA) areas.
  (SSA270M)...For others.

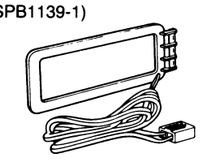
- Stereo connection cable 1
  (SJP2129-1)

- AC power supply cord 1
  (SJA163)...For (XL) area
  (SJA185)...For (XA) area
  (SFDAC05E03)...For others.

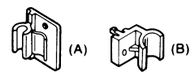


- Screws 2
  (XTN3+10AFZ)

- AM loop antenna 1
  (SPB1139-1)



- AM antenna holders 2
  (SMA233-1M)



Note: Configuration of AC power supply cord and FM indoor antenna differs according to area.

■ MEASUREMENTS AND ADJUSTMENTS

FM ADJUSTMENT

Control positions and equipment used

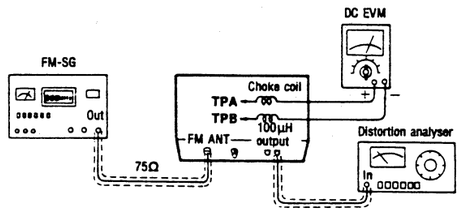
- FM signal generator(FM-SG)
- Stereo modulator
- Distortion analyser
- DC electronic voltmeter(EVM)
- Frequency counter
- Choke coil(100μH)
- Resistor(100kΩ)

Note: For Z202(AM-IFT) and Z201(AM ANT and OSC coil), they are supplied as adjusted parts. So, do not turn the cores of the parts.

FM MONO DISTORTION ADJUSTMENT

1.Test equipment connection is shown in figure.
2.Set the unit to **"FM"** mode.
3.Set the radio frequency display and signal generator to **100.10MHz**.
4.Adjust the core of **T201** so that the voltage measured in signal mode is **0mV(0±20mV)** in 300mV range.
5.Adjust **T202** so that the distortion factor of L-CH is minimized.
6.Repeat steps 4 and 5.
7.Make sure that the distortion factors of L-CH and R-CH are nearly the same and minimum.
Note: The adjusting screwdriver used should be made of resin.

FM SIGNAL GENERATOR CONDITION
Modulation 100%
Modulation frequency 1kHz
Output level.....66dB



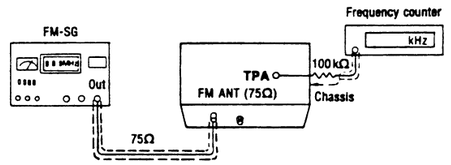
TPA = TP201 , TPB = TP202

MPX VCO ADJUSTMENT

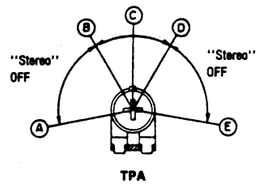
1.Test equipment connection is shown in figure.
2.Set the unit to **"on/auto"** position.
3.Set the radio dial and signal genarator to **100.10MHz**.
4.Adjust **VR301** for **19kHz±30Hz** on frequency counter reading.

USING ALTERNATE SYSTEM
1.Receive the stereo broadcast.
2.Adjust **VR301** until stereo indicator lights up. Fix the arm of **VR301** as shown in figure.

FM SIGNAL GENERATOR CONDITION
Modulation 100%
Modulation frequency 0kHz
Output level.....66dB



TPA = TP301

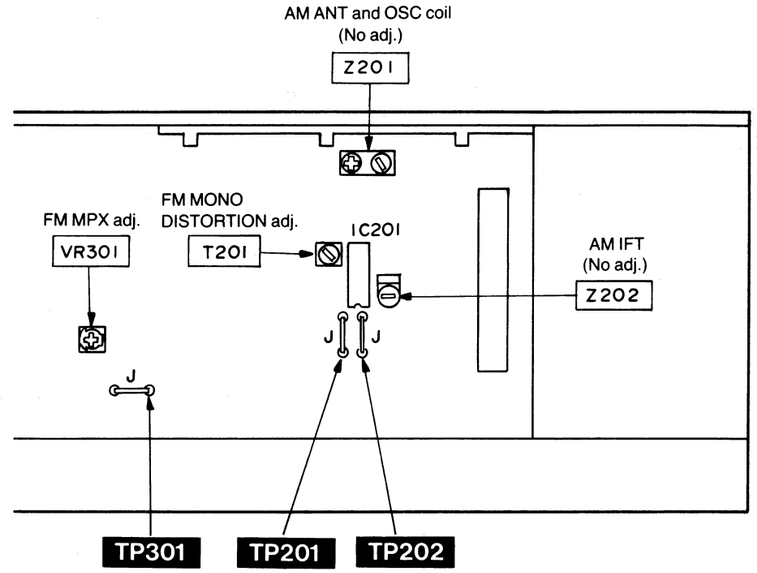


TPA

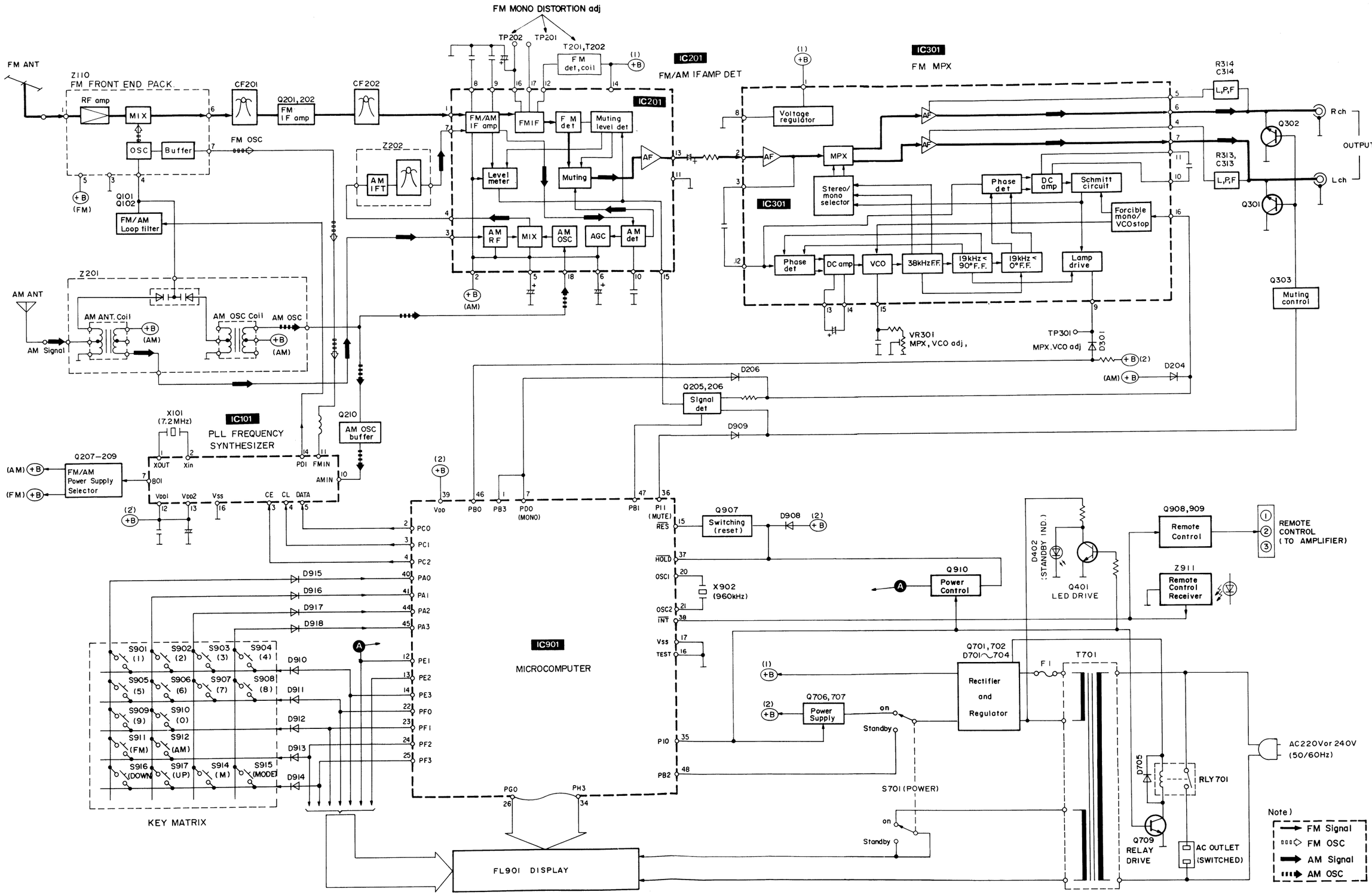
Ⓐ−Ⓑ,
Ⓓ−Ⓔ..... "Stereo" OFF position
Ⓑ−Ⓓ..... "Stereo" ON position (Indicator lighting)
Ⓒ..... Adjust point of pilot circuit

TPA = VR301

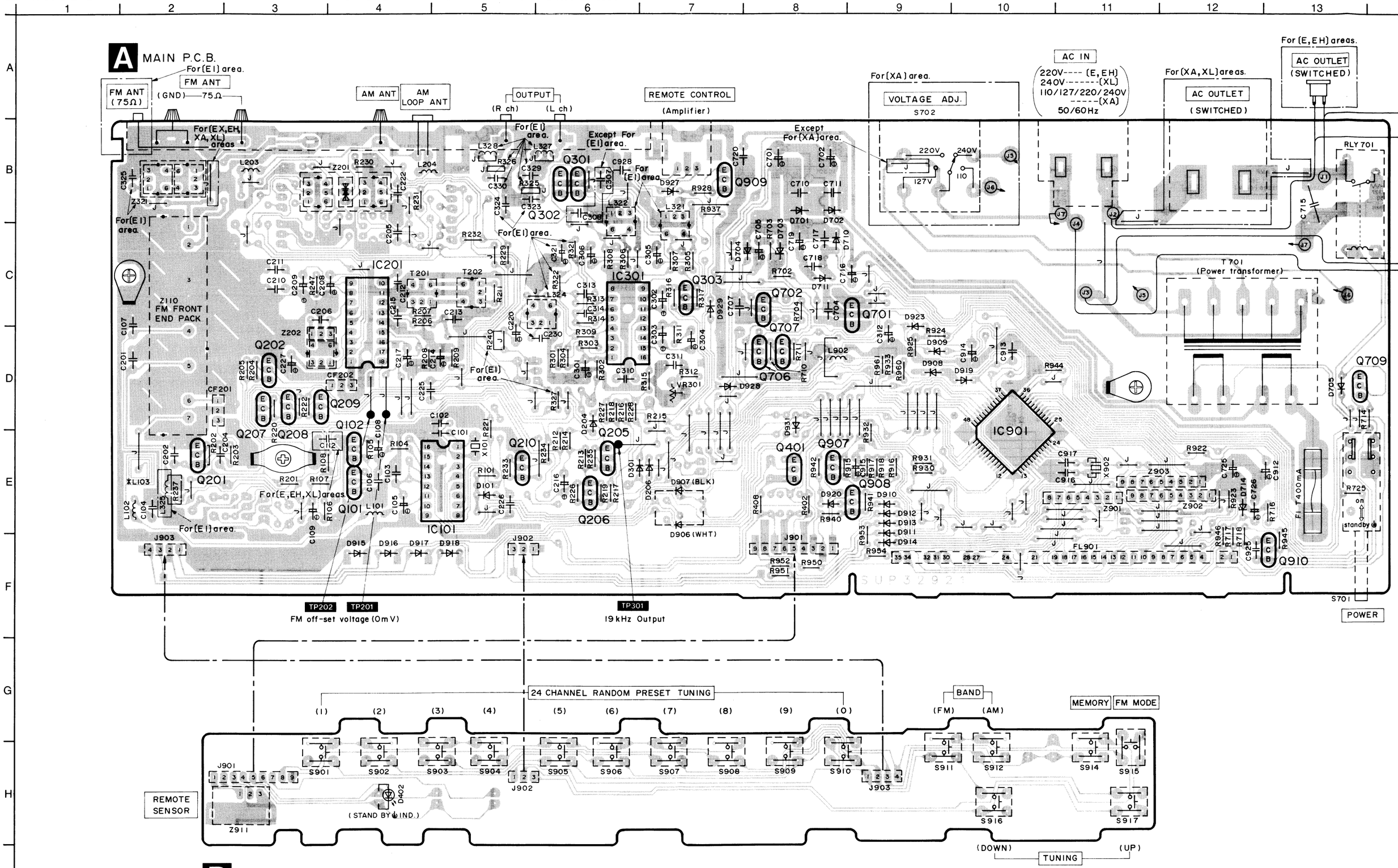
●Adjustment points



■ BLOCK DIAGRAM

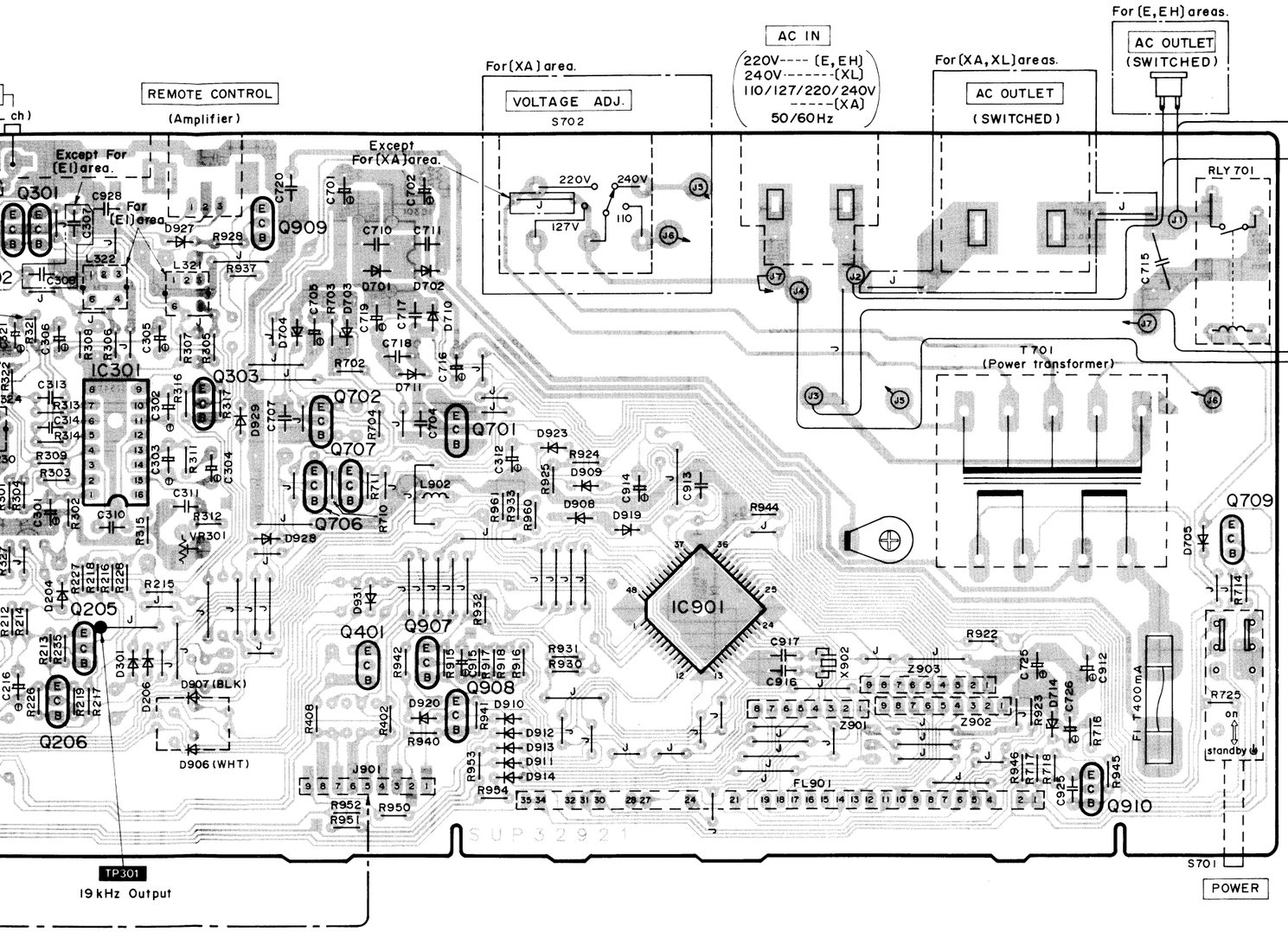


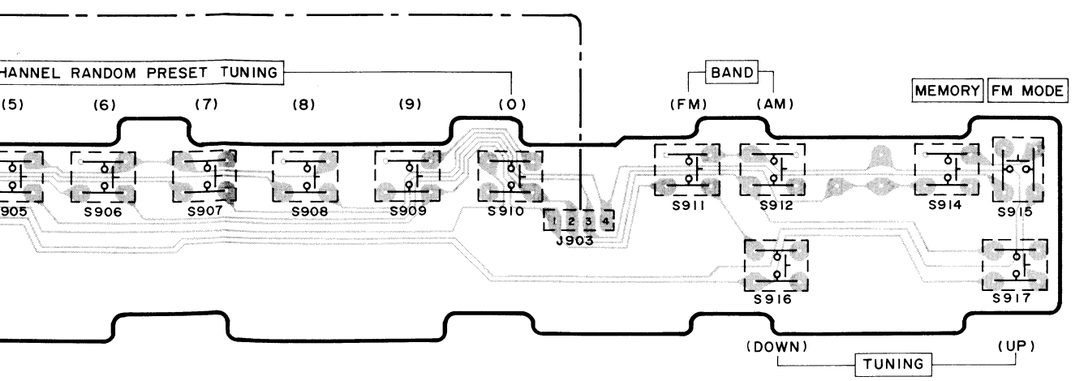
■ CIRCUIT BOARDS AND WIRING CONNECTION DIAGRAM



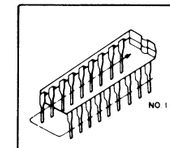
GRAM

6 7 8 9 10 11 12 13 14 15 16 17 18 19

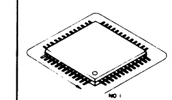




■ TERMINAL GUIDE OF IC'S, TRANSISTORS AND DIODES

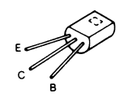


SVIUPC 1161C3	16 Pin
LM7001	16 Pin
AN7273B	18 Pin

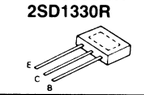


LC6512A3377	48 pin

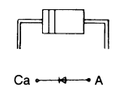
2SC3940A-Q



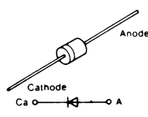
2SC2787L
2SC1740SQ
2SA933SQR
2SD1330R

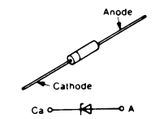


SVD1SR35200



MA165, MA162A

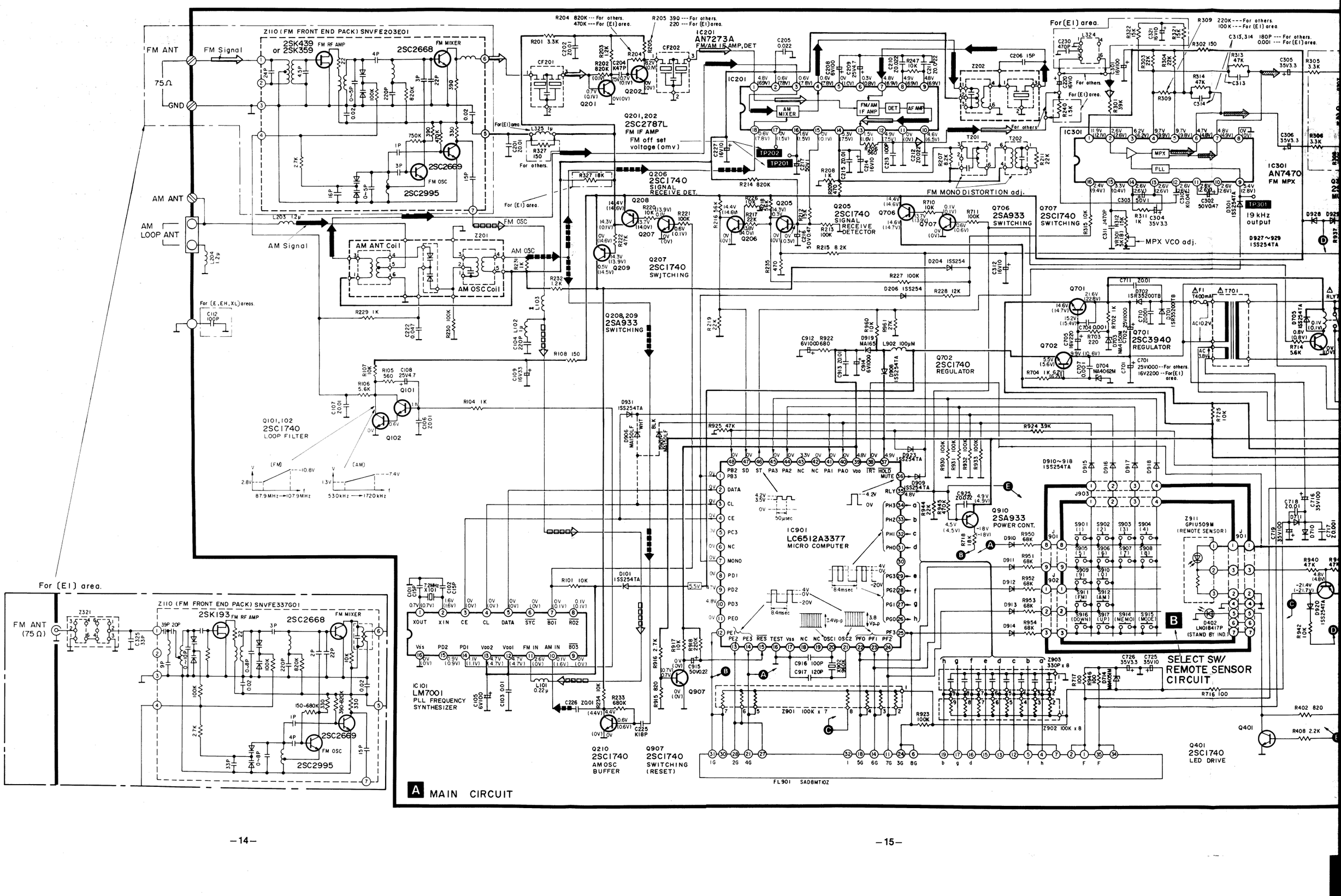


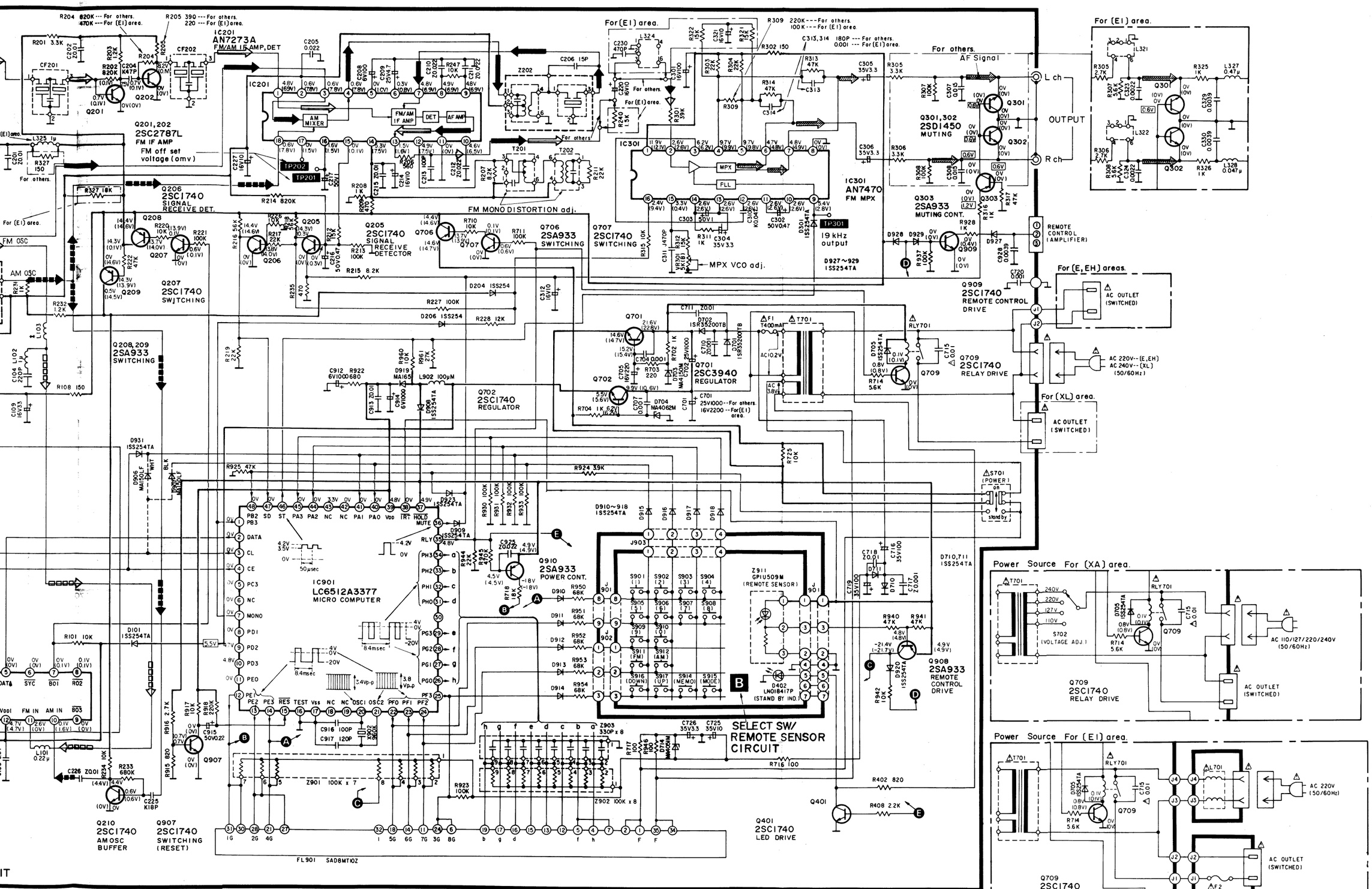


MA4051M,
MA4062M,
MA4150M

ST-Z980 ST-Z980

SCHEMATIC DIAGRAM




IC201 AN7273A FM/AM IF AMP, DET
Q201,202 2SC2787L FM IF AMP
FM off set voltage (omv)
Q206 2SC1740 SIGNAL RECEIVE DET.
Q205 2SC1740 SIGNAL RECEIVE DETECTOR
Q207 2SC1740 SWITCHING
Q208,209 2SA933 SWITCHING
Q210 2SC1740 AM OSC BUFFER
Q907 2SC1740 SWITCHING (RESET)
Q702 2SC1740 REGULATOR
Q701 2SC3940 REGULATOR
Q706 2SA933 SWITCHING
Q707 2SC1740 SWITCHING
IC301 AN7470 FM MPX
19 kHz output
MPX VCO adj.
FM MONO DISTORTION adj.
Q301,302 2SD1450 MUTING
Q303 2SA933 MUTING CONT.
AF Signal
L ch
R ch
OUTPUT
Q909 2SC1740 REMOTE CONTROL DRIVE
REMOTE CONTROL (AMPLIFIER)
Q709 2SC1740 RELAY DRIVE
Q908 2SA933 REMOTE CONTROL DRIVE
Q910 2SA933 POWER CONT.
IC901 LC6512A3377 MICRO COMPUTER
SELECT SW/ REMOTE SENSOR CIRCUIT
Z911 GP1U509M (REMOTE SENSOR)
Q401 2SC1740 LED DRIVE
FL901 SAD8MT10Z
For (E1) area.
For others.
For (E,EH) areas.
For (XL) area.
AC OUTLET (SWITCHED)
AC 220V--(E,EH) AC 240V--(XL) (50/60Hz)
S701 (POWER) on stand by
Power Source For (XA) area.
S702 (VOLTAGE ADJ.)
AC 110/127/220/240V (50/60Hz)
Power Source For (E1) area.
AC 220V (50/60Hz)
F1 T400mA
F2 T2.5A

21 22 23 24 25 26

(This schematic diagram may be modified at any time with the development of new technology.)

Note 1:

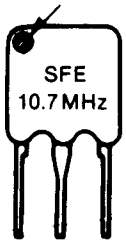
- **S701** : Power source switch in "**on**" position.
- **S702** : Voltage selector switch in "**240 V**" position.
  (110 V⟷127 V⟷220 V⟷240 V)
  For (XA) area only.
- **S901~S910** : Preset tuning switch.
  (S901: CH1, S902: CH2, S903: CH3, S904: CH4, S905: CH5, S906: CH6, S907: CH7, S908: CH8, S909: CH9, S910: CH0)
- **S911** : FM select switch.
- **S912** : AM select switch.
- **S914** : Memory set switch. (manual ↔ auto memory)
- **S915** : FM mode switch.
- **S916** : Tuning (down) switch.
  [down: tuning to lower frequency]
- **S917** : Tuning (up) switch.
  [up: tuning to higher frequency]
- Indicated voltage values are the standard values for the unit measured by the DC electronic circuit tester (high-impedance) with the chassis taken as standard. Therefore, there may exist some errors in the voltage values, depending on the internal impedance of the DC circuit tester. ( ): AM voltage
- —□— Positive voltage lines
  ▭▭▭▷ FM OSC
  ▬▬▬▶ AM OSC
  ⇨ AF signal lines
  ⇨ FM signal
  ➡ AM signal
- Important safety notice
  Components identified by ⚠ mark have special characteristics important for safety. When replacing any of these components, use only manufacturer's specified parts.

Note 2:

- **Use of ceramic filters in pairs**

The ceramic filters (CF201, CF202) for FM-IF circuit are available in three ranks. For this circuit, be sure to use the ceramics of the same rank in a pair.
At repairing and replacement, pay close attention to the diodes (D906, D907) for use as different diodes must be used depending on each rank of the ceramic filters.

Color marking
(Red, Black or White)



RANK (Color)	D906	D907	CENTER FREQUENCY
White	○	×	10.65MHz
Red	×	×	10.70MHz
Black	×	○	10.76MHz

Note: ○ mark: Diode is used.
× mark: Diode is not used.

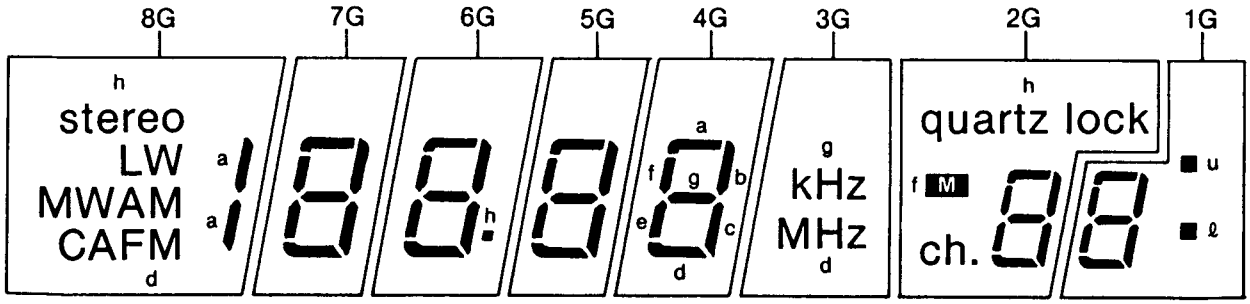
* Caution!

IC and LSI are sensitive to static electricity.
Secondary trouble can be prevented by taking care during repair.

* Cover the parts boxes made of plastics with aluminum coil.
* Ground the soldering iron.
* Put a conductive mat on the work table.
* Do not touch the legs of IC or LSI with the fingers directly.

■ DESCRIPTION OF FL PANEL

• GRID ASSIGNMENT



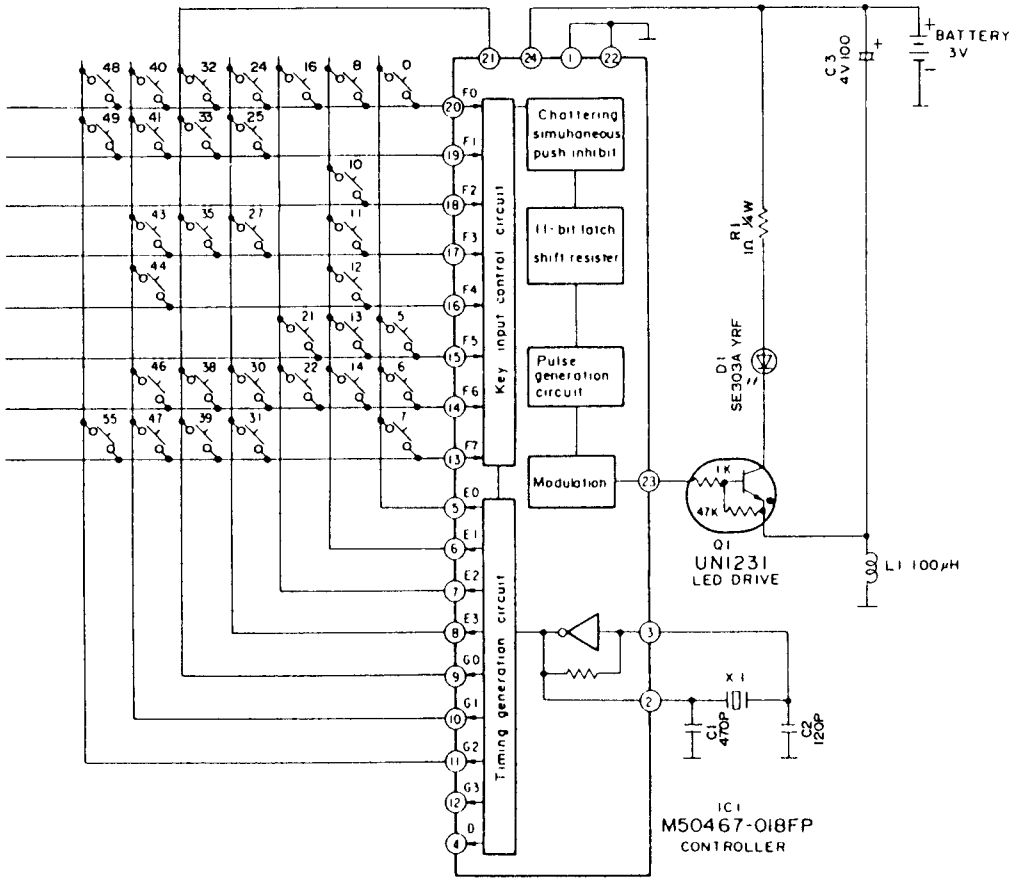
Note: The grid of 3G and 8G are used for external connection.

• PIN CONNECTION

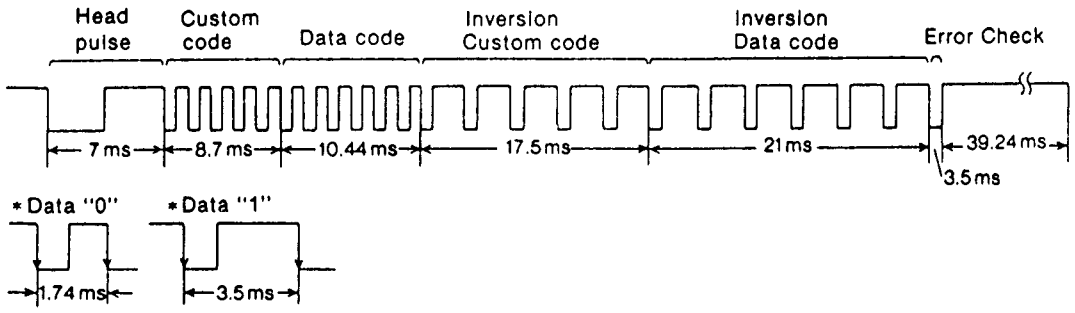
PIN NO.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
CONNECTION	F1	F1	NP	h	f	8G	AM	MW	CA	LW	7G	c	a	6G	e	d	g	5G
PIN NO.	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	
CONNECTION	b	NP	4G	NP	NP	3G	NP	NP	ch	2G	NP	u	1G	ℓ	NP	F2	F2	

•Remote control unit

Note: Key No. 7 is for EUR64758 only

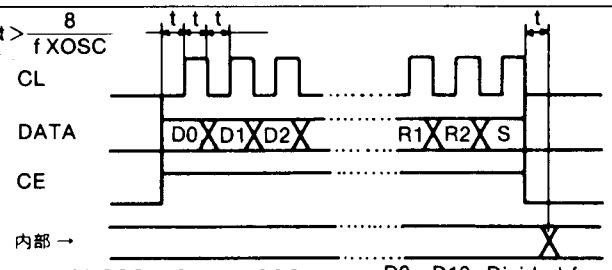


• Remote control data code



Key No.	Function	Custom Code	Data Code	Key No.	Function	Custom code	Data code
0	CD5	01100	010100	30	TUNER 8	01001	010111
5	VOL UP	01001	100100	31	TUNER 1	01001	010000
6	TUNER 5	01001	010100	32	CD9	01100	011000
7	POWER	01001	100000	33	CD2	01100	010001
8	CD6	01100	010101	35	CD SKIP ◀◀	01100	000010
10	PRO/CON	01100	011101	38	TUNER 9	01001	011000
11	CD PLAY	01100	001010	39	TUNER 2	01001	010001
12	DECK PLAY	01001	001010	40	CD10	01100	011001
13	VOL DOWN	01001	100101	41	CD3	01100	010010
14	TUNER 6	01001	010101	43	CD SKIP ▶▶	01100	000011
16	CD7	01100	010110	44	DECK STOP	01001	000000
21	MUTING	01001	100111	46	TUNER 10	01001	011001
22	TUNER 7	01001	010110	47	TUNER 3	01001	010010
24	CD8	01100	010111	48	CD+10	01100	011010
25	CD1	01100	010000	49	CD4	01100	010011
27	CD STOP	01100	000000	55	TUNER 4	01001	010011

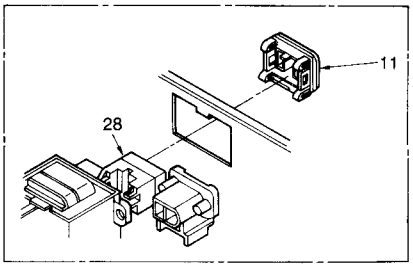
■ FUNCTIONS OF IC TERMINALS (IC901: LC6512A3377)

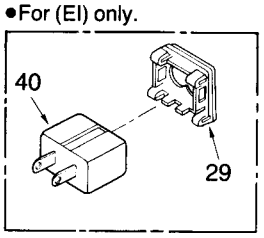
<table>
<tr><th>PIN NO.</th><th>IN/OUT</th><th>MARK</th><th>DESCRIPTION OF TERMINAL</th></tr>
<tr><td>1</td><td>INPUT</td><td>PB3</td><td>Computer drive terminal.</td></tr>
<tr><td>2</td><td rowspan="3">OUTPUT</td><td>DATA</td><td rowspan="3">Data output $t > \frac{8}{f\,XOSC}$
 

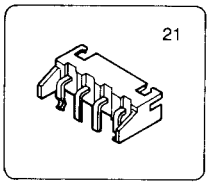
f XOSC: Crystal OSC
D0~D13: Divided frequency data
R0~R2: Reference frequency data</td></tr>
<tr><td>3</td><td>CL</td></tr>
<tr><td>4</td><td>CE</td></tr>
<tr><td>5</td><td>—</td><td>PC3</td><td>Not used in this unit.</td></tr>
<tr><td>6</td><td>—</td><td>NC</td><td>Not used in this unit.</td></tr>
<tr><td>7</td><td>OUTPUT</td><td>PD0</td><td>Auto/mono changeover terminal. (auto → 0V, mono → 5V)</td></tr>
<tr><td>8</td><td>OUTPUT</td><td>PD1</td><td>Computer drive terminal.</td></tr>
<tr><td>9</td><td rowspan="3">—</td><td>PD2</td><td rowspan="3">Not used in this unit.</td></tr>
<tr><td>10</td><td>PD3</td></tr>
<tr><td>11</td><td>PE0</td></tr>
<tr><td>12
~
14
•
22
~
25</td><td>OUTPUT</td><td>PE1
~
PE3
•
PF0
~
PF3</td><td>Digital signal terminal for display.
Terminal for key return signal to external key matrix.</td></tr>
<tr><td>15</td><td>INPUT</td><td>$\overline{RES}$</td><td>Reset terminal.</td></tr>
<tr><td>16</td><td rowspan="2">—</td><td>TEST</td><td rowspan="2">Ground terminal.</td></tr>
<tr><td>17</td><td>V_{SS}</td></tr>
<tr><td>18</td><td rowspan="2">—</td><td rowspan="2">NC</td><td rowspan="2">Not used in this unit.</td></tr>
<tr><td>19</td></tr>
<tr><td>20</td><td>INPUT</td><td>OSC1</td><td rowspan="2">Connecting terminal for crystal oscillator.</td></tr>
<tr><td>21</td><td>OUTPUT</td><td>OSC2</td></tr>
<tr><td>26
~
29
•
31
~
34</td><td>OUTPUT</td><td>PG0
~
PG3
•
PH0
~
PH3</td><td>Segment signal terminal for display.</td></tr>
<tr><td>30</td><td>—</td><td>NC</td><td>Not used in this unit.</td></tr>
<tr><td>35</td><td>OUTPUT</td><td>P10</td><td>Control signal terminal for relay (RLY701).</td></tr>
<tr><td>36</td><td>OUTPUT</td><td>P11</td><td>Muting signal terminal. (Muting → High level)</td></tr>
<tr><td>37</td><td>INPUT</td><td>$\overline{HOLD}$</td><td>Terminal for power failure detection.</td></tr>
<tr><td>38</td><td>INPUT</td><td>$\overline{INT}$</td><td>Terminal for remote control cord.</td></tr>
<tr><td>39</td><td>INPUT</td><td>V_{DD}</td><td>Power supply terminal of device.
Voltage of 5V is supplied during operation of device.</td></tr>
<tr><td>40
41
44
45</td><td>INPUT</td><td>PA0
~
PA3</td><td>Terminal for key return signal to external key matrix.
[KEY MATRIX]
<table><tr><td>Pin No.</td><td>45</td><td>44</td><td>41</td><td>40</td></tr><tr><td>14</td><td>CH4</td><td>CH3</td><td>CH2</td><td>CH1</td></tr><tr><td>22</td><td>CH8</td><td>CH7</td><td>CH6</td><td>CH5</td></tr><tr><td>23</td><td>—</td><td>—</td><td>CH0</td><td>CH9</td></tr><tr><td>24</td><td>—</td><td>—</td><td>AM</td><td>FM</td></tr><tr><td>25</td><td>MODE</td><td>MEMORY</td><td>UP</td><td>DOWN</td></tr></table></td></tr>
<tr><td>42
•
43</td><td>—</td><td>NC</td><td>Not used in this unit.</td></tr>
<tr><td>46</td><td rowspan="3">INPUT</td><td rowspan="3">PB0
~
PB2</td><td>Stereo signal terminal.</td></tr>
<tr><td>47</td><td>SD signal terminal.</td></tr>
<tr><td>48</td><td>Tuner select terminal. (Ground connection)</td></tr>
</table>

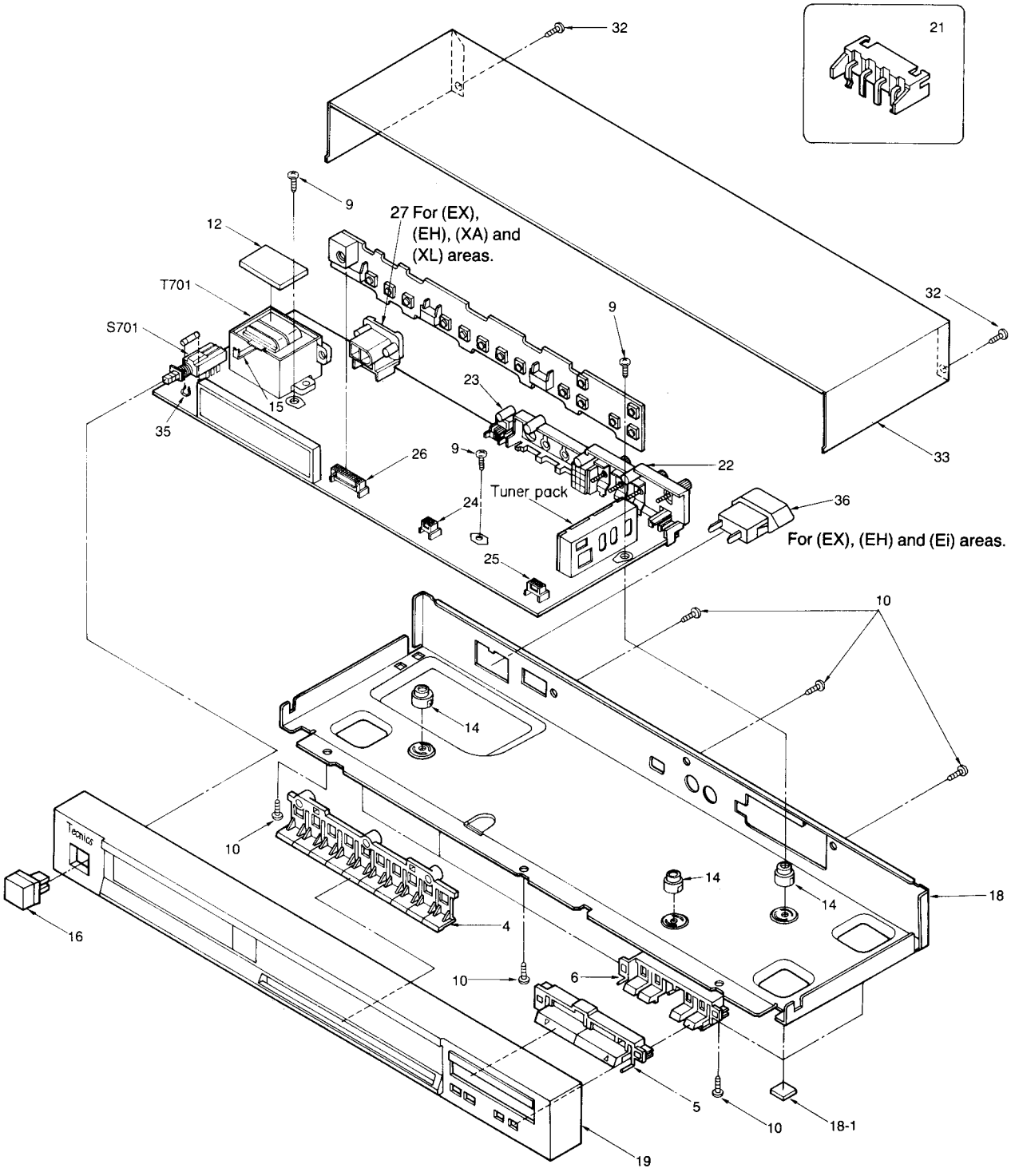
■ EXPLODED VIEW

•CABINET PARTS









■ REPLACEMENT PARTS LIST

Notes : ＊Important safety notice :
Components identified by ⚠ mark have special characteristics important for safety. When replacing any of these components use only manufacturer's specified parts.
＊Bracketed indications in Ref. No. columns specify the area. (Refer to the first page for area.)
Parts without these indications can be used for all areas.
＊Remote Control Ass'y:
Supply period for three years from termination of production.

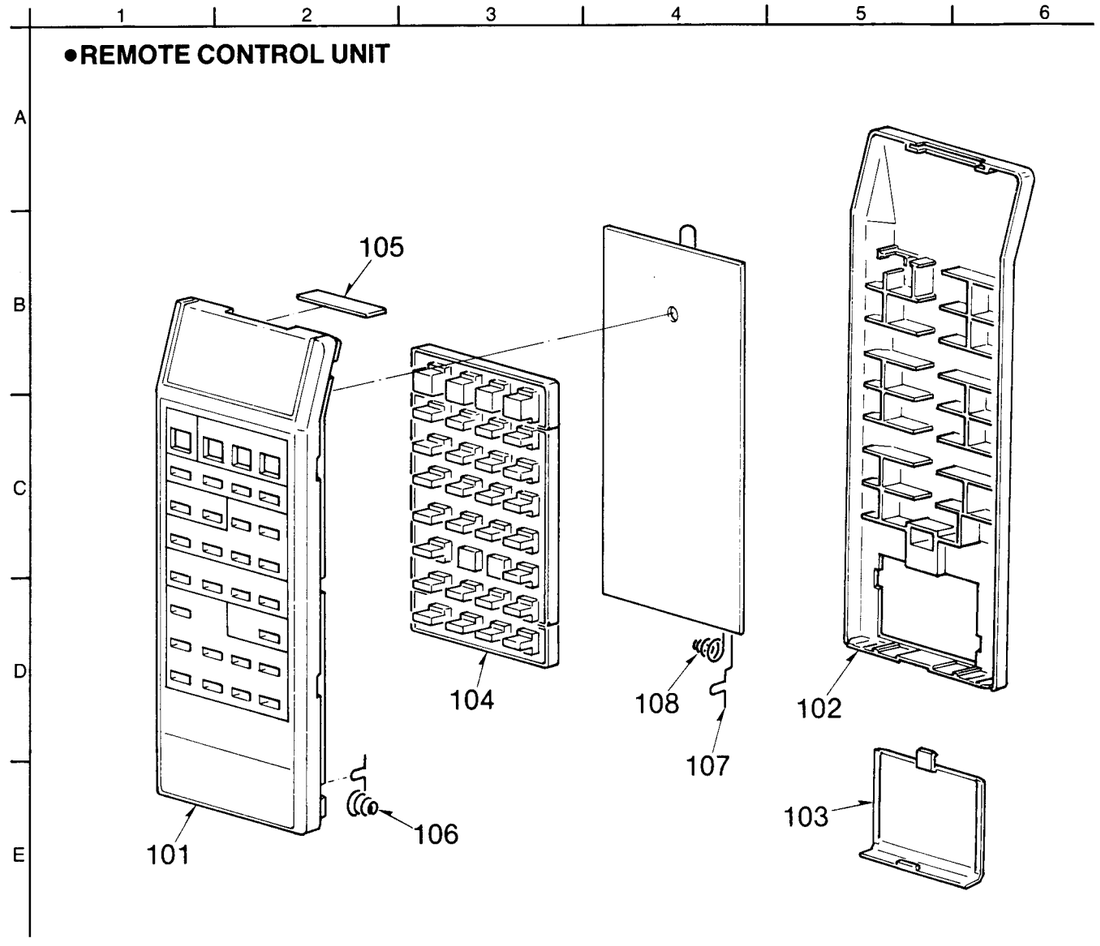
●CABINET PARTS LIST

Ref. No.	Part No.	Description
CABINET AND CHASSIS		
4	SBC941	BUTTON
5	SBC942B	BUTTON
6	SBC943-4	BUTTON
9	XTBS3+12F1	SCREW
10	XTBS3+8JFZ1	SCREW
11	SJS9330A	AC OUTLET COVER
(XA, XL)		
12	SHG6374-1	RUBBER SPACER
14	SHE170-1	SPACER
15	SUS803	COIL SPRING
(EX, EH, EI)		
(XL)		
16	SBC666-5	BUTTON
18	SGPTZ980-KEI	REAR PANEL ASS'Y
(EI)		
18	SGPTZ980-KEX	REAR PANEL ASS'Y
(EX, EH)		
18	SGPTZ980-KXA	REAR PANEL ASS'Y
(XA)		
18	SGPTZ980-KXL	REAR PANEL ASS'Y
(XL)		
18-1	SKL293	FOOT
19	SYYTZ980-KEX	FRONT PANEL ASS'Y
21	SJT30345JQ	TERMINAL (3P)
22	SJF8508NP	TERMINAL PLATE
(EX, EH, EI)		
22	SJF8614NP	TERMINAL PLATE
(XA, XL)		
23	SJS306	REMOTE CONTROL JACK
24	SJS50378JQ	CONNECTOR (3P)
25	SJS50478JQ	CONNECTOR (4P)
26	SJS50978JQ	CONNECTOR (9P)
27 ⚠	SJS9236	AC INLET
(EX, EH, XA, XL)		
28 ⚠	SJS9330B	AC OUTLET
(XA, XL)		
29		
(EI)	SJS9231A	AC INLET COVER
31	SJT30445JQ	CONNECTOR
32	SJT30945JQ	CONNECTOR
32	XTBS3+8JFZ1	SCREW
33	SKC1931K99	CABINET BODY
35	SJT347	FUSE HOLDER
36 ⚠	SJS9225	AC OUTLET
(EX, EH, EI)		
37 ⚠	SJT388	FUSE HOLDER
(EI)		
38	SWKZ960EG1	WIRING MATERIAL
(EI)		
39	SWKZ960EG2	WIRING MATERIAL
(EI)		
40 ⚠	SJS9231-1B	AC INLET
(EI)		

●PACKING PARTS LIST

Ref. No.	Part No.	Description
PACKING MATERIAL		
P1	SPS5239	PAD
P2	SPS5240	PAD
P3	SPP715	POLYETHYLENE BAG
P4	SPG6360	PACKING CASE
ACCESSORIES		
A1	SQF13332	INSTRUCTION BOOK
(EX, EH)		
A1	SQF13335	INSTRUCTION BOOK
(EI)		
A1	SQF13336	INSTRUCTION BOOK
(XL)		
A1	SQF13411	INSTRUCTION BOOK
(XA)		
A2 ⚠	SFDAC05E03	POWER CORD
(EX, EH, EI)		
A2 ⚠	SJA163	POWER CORD
(XL)		
A2 ⚠	SJA185	POWER CORD
(XA)		
A3	SJP2129-1	CONNECTION CORD
A4	SSA269M	FM ANTENNA
(XA, XL)		
A4	SSA270M	FM ANTENNA
(EX, EH, EI)		
A5	SPB1139-1	AM LOOP ANTENNA
A8	XTBS3+8JFZ1	SCREW
A9 ⚠	RJP120ZBS-H	AC PLUG ADAPTOR
(XA)		
A10	SPB1153	STABILIZER PIN
A11	EUR64758	REMOTE CONTROLL
(EX, EH, EI)		
(XA)		
A11	EUR64759	REMOTE CONTROLLER
(XL)		
A12	UM-4NEP	BATTERY

●REMOTE CONTROL UNIT



●REMOTE CONTROL UNIT PARTS LIST

Ref. No.	Part No.	Description
REMOTE CONTROL		
INTEGRATED CIRCUITS		
IC1	M50467018FP	INTEGRATED CIRCUIT
TRANSISTORS		
Q1	UN1231	TRANSISTOR
DIODES		
D1	LN66	L.E.D
COIL		
L1	ELEA101JA	COIL
OSCILLATOR		
X1	CSB420PB1	OSCILLATOR
RESISTORS		
R1	ERDS2TJ1R0	CARBON, 1Ω, 1/4W
CAPACITORS		
C1	ECKD1H471KB	CERAMIC, 470PF, 50V
C2	ECKD1H121KB	CERAMIC, 120PF, 50V
C3	ECEA0GK101	ELECTROLYTIC, 100μF, 4V

Ref. No.	Part No.	Description
MECHANISM PARTS		
101	UR64VCS605	UPPER CABINET
(XL)		
101	UR64VCS606	UPPER CABINET
(EX, EI, EH)		
(XA)		
102	UR64CS803A	LOWER CABINET
103	UR64EC804	BATTERY COVER
104	UR64CT805	RUBBER SWITCH
(EX, EI, EH)		
(XA)		
104	UR64CT805F	RUBBER SWITCH
(XL)		
105	UR52SB327	PLATE
106	UR64TD374	BATTERY TERMINAL(COMMON)
107	UR64TD808	TERMINAL
108	UR64TD809	TERMINAL
REMOTE CONTROL ASS'Y		
RC1	EUR64758	REMOTE CONTROLL
(EX, EI, EH)		
(XA)		
RC1	EUR64759	REMOTE CONTROLL
(XL)		

●ELECTRICAL PARTS LIST

Ref. No.	Part No.	Description
INTEGRATED CIRCUITS		
IC101	LM7001	I.C. SYNTHESIZER
IC201	AN7273B	I.C. FM-AM IF
IC301	SVIUPC1161C3	I.C.FM MPX
IC901	LC6512A3377	I.C. MICROCOMPUTER
TRANSISTORS		
Q101	2SC1740SQ	TRANSISTOR
Q102	2SC1740SQ	TRANSISTOR
Q201	2SC2787L	TRANSISTOR
Q202	2SC2787L	TRANSISTOR
Q205	2SC1740SQ	TRANSISTOR
Q206	2SC1740SQ	TRANSISTOR
Q207	2SC1740SQ	TRANSISTOR
Q208	2SA933SQR	TRANSISTOR
Q209	2SA933SQR	TRANSISTOR
Q210	2SC1740SQ	TRANSISTOR
Q212	2SC1740SQ	TRANSISTOR
Q301	2SD1330R	TRANSISTOR
Q302	2SD1330R	TRANSISTOR
Q303	2SA933SQR	TRANSISTOR
Q401	2SC1740SQ	TRANSISTOR
Q701	2SC3940AQSTA	TRANSISTOR
Q702	2SC1740SQ	TRANSISTOR
Q706	2SA933SQR	TRANSISTOR
Q707	2SC1740SQ	TRANSISTOR
Q709	2SC1740SQ	TRANSISTOR
Q907	2SC1740SQ	TRANSISTOR
Q908	2SA933SQR	TRANSISTOR
Q909	2SC1740SQ	TRANSISTOR
Q910	2SA933SQR	TRANSISTOR
DIODES		
D101	MA165	DIODE
D204	MA165	DIODE
D206	MA165	DIODE
D301	MA165	DIODE
D402	LN018417P	DIODE
D701 ⚠	SVD1SR35200A	DIODE
D702 ⚠	SVD1SR35200A	DIODE
D703	MA4150M	DIODE
D704	MA4062M	DIODE
D705	MA165	DIODE
D710	MA165	DIODE
D711	MA165	DIODE
D714	MA4051-M	DIODE
D902	MA165	DIODE
D906	MA162A	DIODE
D907	MA162A	DIODE
D908	MA165	DIODE
D909	MA165	DIODE
D910	MA165	DIODE
D911	MA165	DIODE
D912	MA165	DIODE
D913	MA165	DIODE
D914	MA165	DIODE
D915	MA165	DIODE
D916	MA165	DIODE
D917	MA165	DIODE
D918	MA165	DIODE
D919	MA165	DIODE
D920	MA165	DIODE
D923	MA165	DIODE
D927	MA165	DIODE
D928	MA165	DIODE
D929	MA165	DIODE
D931	MA165	DIODE
VARIABLE RESISTORS		
VR301	EVNDXAA00B53	SEMI FIXED RESISTOR
COILS AND TRANSFORMERS		
L101	RLQZPR22KT-Y	COIL
L102	RLQZP1R0KT-Y	COIL
L203	ELEPK1R2MA	COIL
L204	ELEPK1R2MA	COIL
L321 (EI)	SLM1B9-P	MPX COIL
L322 (EI)	SLM1B9-P	MPX COIL
L324 (EI)	SLM1B10-M	COIL
L325 (EI)	RLQZP1R0KT-Y	COIL
L327 (EI)	ELEPKR47MA	COIL
L328 (EI)	ELEPKR47MA	COIL
L701 (EI)	SLQZ650MH49	CHOKE COIL
L902	ELEPK101KA	CHOKE COIL
T201	SLI4B511-Z	I.F.TRANSFORMER
T202	SLI4B513-Z	I.F.TRANSFORMER
T701 ⚠ (EX, EH, EI)	SLT5K259-K	POWER TRANSFORMER
T701 ⚠ (XL)	SLT5K260-K	POWER TRANSFORMER
T701 ⚠ (XA)	SLT5K261-K	POWER TRANSFORMER
Z201	SLA2Z1-T	COIL
Z202	SLI7Z101-T	I.F.TRANSFORMER
COMPONENT COMBINATIONS		
Z110 (EX, EH, XA) (XL)	SNVFE203E01	TUNER
Z110 (EI)	SNVFE203E01	TUNER
Z321 (EI)	SLA4Z13-Z	ANTENNA COIL
Z901	EXBF8E104J	COMBINATION
Z902	EXBF9E104J	COMBINATION
Z903	EXFP8331MW	COMBINATION
Z911	GP1U509M	DIODE, REMOTE SENSOR
FILTERS		
CF201 (EX, EH, XA) (XL)	SVFE107MS8-Q	CERAMIC FILTER
CF201 (EI)	SVFE107MZ2-Q	CERAMIC FILTER
CF202 (EI)	SVFE107MM-Q	CERAMIC FILTER
CF202 (EX, EH, XA) (XL)	SVFE107MS8-Q	CERAMIC FILTER
OSCILLATORS		
X101	SVQ49U722T-S	CRYSTAL OSCILLATOR
X902	EF0A960K04A	CRYSTAL OSCILLATOR
DISPLAYS		
FL901	SAD8MT10Z	DISPLAY TUBE
FUSES		
F1 ⚠	XBA2C04TB0	FUSE, T0.4A 250V
F2 ⚠ (EI)	XBA2C25TB0	FUSE, T2.5A 250V
SWITCHES		
S701 ⚠	SSH1196-1	SW, POWER
S702 ⚠ (XA)	SSR187-1	SW, VOLTAGE SELECTOR
S901	SSG13	SW, CH1
S902	SSG13	SW, CH2
S903	SSG13	SW, CH3
S904	SSG13	SW, CH4
S905	SSG13	SW, CH5
S906	SSG13	SW, CH6
S907	SSG13	SW, CH7
S908	SSG13	SW, CH8
S909	SSG13	SW, CH9
S910	SSG13	SW, CH0
S911	SSG13	SW, FM
S912	SSG13	SW, AM
S914	SSG13	SW, MEMO
S915	SSG13	SW, MODE
S916	SSG13	SW, TUNING(DOWN)
S917	SSG13	SW, TUNING(UP)
RELAYS		
RL701 ⚠	SSY138	RELAY

■ RESISTORS AND CAPACITORS

Notes : * Important safety notice :
Components identified by ⚠ mark have special characteristics important for safety. When replacing any of these components use only manufacturer's specified parts.
* Bracketed indications in Ref. No. columns specify the area. (Refer to the first page for area.)
Parts without these indications can be used for all areas.

Numbering System of Resistor

Example:

ERD	25	F	J	102
Type	Wattage (1/4W)	Shape	Tolerance	Value (1KΩ)
ERX	2	AN	J	471
Type	Wattage (2W)	Shape	Tolerance	Value (470Ω)

Numbering System of Capacitor

Example:

ECKD	1H	102	Z	F
Type	Voltage (50V)	Value (0.001μF)	Tolerance	Peculiarity
ECEA	50	M	330	
Type	Voltage (50V)	Pecliarity	Value (33μF)	

● Capacity values are in microfarads (μF) unless specified otherwise, P = Pico-farads (pF) F = Farads (F).
● Resistance values are in ohms (Ω), unless specified otherwise, 1K = 1,000Ω, 1M = 1,000kΩ

Resistor Type		Wattage		Tolerance
ERD	: Carbon	10 : 1/8W	12 : 1/2W	J : ±5%
ERG	: Metal Oxide	14 : 1/4W	25 : 1/4W	F : ±1%
ERQ	: Fuse Type Metal	1A : 1W	18 : 1/8W	G : ±2%
ERX	: Metal Film	S2 : 1/4W	S1 : 1/2W	J : ±5%
ERD L	: Carbon (chip)	2F : 1/4W	50 : 1/2W	K : ±10%
ERO K	: Metal Film (chip)	2A : 2W	3A : 3W	M : ±20%
ERC	: Solid	6G : 1/10W	8G : 1/8W	
ERF	: Incombustible Box-Shaped			
ERM	: Wire-Wound			
RRJ	: Cip Resistor			
ERJ	: Cip Resistor			

Capacitor Type		Voltage		Tolerance
ECE	: Electrolytic	0J : 6.3V	1A : 10V	K : ±10%
ECCD	: Ceramic	1C : 16V	1E : 25V	M : ±20%
ECKD	: Ceramic Capacitor	1H : 50V	1V : 35V	Z : −80 % −20
ECQM	: Poyester	50 : 50V	05 : 50V	
ECQP	: Polypropylene	2H : 500V	2A : 100V	J : ±5%
ECG	: Ceramic	1 : 100V	1J : 63V	G : ±2%
ECEA N	: Non Polar Electrolytic	KC : 400V AC		F : ±1%
QCU	: Ceramic (Chip Type)	KC : 125V AC (UL)		C : ±0.25pF
ECUX	: Ceramic (Chip Type)			D : ±0.5pF
ECF	: Semiconductor			
EECW	: Liquid electrolyte double layer capacitor			

Ref. No.	Part No.	Value.
RESISTORS(VALUE, WATTAGE)		
R101	ERDS2TJ103	10K 1/4
R104	ERDS2TJ102	1K 1/4
R105	ERDS2TJ561	560 1/4
R106	ERDS2TJ562	5.6K 1/4
R107	ERDS2TJ103	10K 1/4
R108	ERDS2TJ151	150 1/4
R201	ERDS2TJ332	3.3K 1/4
R202	ERDS2TJ824	820K 1/4
R203	ERDS2TJ122	1.2K 1/4
R204 (EI)	ERDS2TJ474T	470K 1/4
R204 (EX, EH, XA) (XL)	ERDS2TJ824	820K 1/4
R205 (EI)	ERDS2TJ221T	220 1/4
R205 (EX, EH, XA) (XL)	ERDS2TJ391	390 1/4
R206	ERDS2TJ561	560 1/4
R207	ERDS2TJ822	8.2K 1/4
R208	ERDS2TJ102	1K 1/4
R209	ERDS2TJ471	470 1/4
R211	ERDS2TJ222	2.2K 1/4
R212	ERDS2TJ153	15K 1/4
R213	ERDS2TJ104	100K 1/4
R214	ERDS2TJ824	820K 1/4
R215	ERDS2TJ822	8.2K 1/4
R216	ERDS2TJ563	56K 1/4
R217	ERDS2TJ223	22K 1/4
R218	ERDS2TJ563	56K 1/4
R219	ERDS2TJ223	22K 1/4
R220	ERDS2TJ103	10K 1/4
R221	ERDS2TJ104	100K 1/4
R222	ERDS2TJ473	47K 1/4
R226	ERDS2TJ103	10K 1/4
R227	ERDS2TJ104	100K 1/4
R228	ERDS2TJ123	12K 1/4
R229	ERDS2TJ102	1K 1/4
R230	ERDS2TJ104	100K 1/4
R231	ERDS2TJ102	1K 1/4
R232	ERDS2TJ122	1.2K 1/4
R233	ERDS2TJ684	680K 1/4
R234	ERDS2TJ103	10K 1/4
R235	ERDS2TJ471	470 1/4
R237 (EX, EH, XA) (XL)	ERDS2TJ151	150 1/4
R240 (EI)	ERDS2TJ152T	1.5K 1/4
R241	ERDS2TJ183	18K 1/4
R242	ERDS2TJ224	220K 1/4
R247	ERDS2TJ103	10K 1/4
R301	ERDS2TJ393	39K 1/4
R302	ERDS2TJ151	150 1/4
R303	ERDS2TJ223	22K 1/4
R304	ERDS2TJ223	22K 1/4
R305 (EI)	ERDS2TJ272T	2.7K 1/4
R305 (EX, EH, XA) (XL)	ERDS2TJ332	3.3K 1/4
R306 (EI)	ERDS2TJ272T	2.7K 1/4
R306 (EX, EH, XA) (XL)	ERDS2TJ332	3.3K 1/4
R307 (EX, EH, XA) (XL)	ERDS2TJ104	100K 1/4
R307 (EI)	ERDS2TJ562T	5.6K 1/4
R308 (EX, EH, XA) (XL)	ERDS2TJ104	100K 1/4
R308 (EI)	ERDS2TJ562T	5.6K 1/4
R309 (EI)	ERDS2TJ104T	100K 1/4
R309 (EX, EH, XA) (XL)	ERDS2TJ224	220K 1/4

Ref. No.	Part No.	Value.
R311	ERDS2TJ102	1K 1/4
R312	ERDS2TJ153	15K 1/4
R313	ERDS2TJ473	47K 1/4
R314	ERDS2TJ473	47K 1/4
R315	ERDS2TJ103	10K 1/4
R316	ERDS2TJ102	1K 1/4
R317	ERDS2TJ473	47K 1/4
R321 (EI)	ERDS2TJ153T	15K 1/4
R322 (EI)	ERDS2TJ153T	15K 1/4
R325 (EI)	ERDS2TJ102T	1K 1/4
R326 (EI)	ERDS2TJ102T	1K 1/4
R327 (EI)	ERDS2TJ183	18K 1/4
R402	ERDS2TJ821	820 1/4
R408	ERDS2TJ222	2.2K 1/4
R702	ERDS2TJ102	1K 1/4
R703	ERDS2TJ221	220 1/4
R704	ERDS2TJ102	1K 1/4
R710	ERDS2TJ103	10K 1/4
R711	ERDS2TJ104	100K 1/4
R714	ERDS2TJ562	5.6K 1/4
R716	ERDS2TJ101	100 1/4
R717	ERDS2TJ101	100 1/4
R718	ERDS2TJ183	18K 1/4
R720	ERC12ZGK335	3.3M 1/2
R725	ERDS2TJ103	10K 1/4
R915	ERDS2TJ821	820 1/4
R915	ERDS2TJ821	820 1/4
R916	ERDS2TJ272	2.7K 1/4
R917	ERDS2TJ103	10K 1/4
R918	ERDS2TJ224	220K 1/4
R922	ERDS2TJ681	680 1/4
R923	ERDS2TJ104	100K 1/4
R924	ERDS2TJ392	3.9K 1/4
R925	ERDS2TJ473	47K 1/4
R928	ERDS2TJ102	1K 1/4
R930	ERDS2TJ104	100K 1/4
R931	ERDS2TJ104	100K 1/4
R932	ERDS2TJ104	100K 1/4
R933	ERDS2TJ104	100K 1/4
R937	ERDS2TJ104	100K 1/4
R940	ERDS2TJ473	47K 1/4
R941	ERDS2TJ473	47K 1/4
R942	ERDS2TJ103	10K 1/4
R944	ERDS2TJ223	22K 1/4
R945	ERDS2TJ474	470K 1/4
R945 (EI)	ERDS2TJ474T	470K 1/4
R946	ERDS2TJ101	100 1/4

Ref. No.	Part No.	Value.
R950	ERDS2TJ683	68K 1/4
R951	ERDS2TJ683	68K 1/4
R952	ERDS2TJ683	68K 1/4
R953	ERDS2TJ683	68K 1/4
R954	ERDS2TJ683	68K 1/4
R960	ERDS2TJ103	10K 1/4
R961	ERDS2TJ273	27K 1/4
CAPACITORS(VALUE,VOLTAGE)		
C101	RCBS1H150JCY	15P 50
C102	RCBS1H150JCY	15P 50
C103	ECKD1H103PF	0.01 50
C104	ECCC1H221K	220P 50
C105	ECEA0JU101	100 6.3
C106	ECKD1H103PF	0.01 50
C107	ECKD1H103PF	0.01 50
C108	ECEA25M4R7R	4.7 25
C109	ECEA1CU330	33 16
C112 (EX, EH, XL)	ECCD1H101K	100P 50
C201	ECKD1H103PF	0.01 50
C202	ECKD1H103PF	0.01 50
C204	ECCD1H470K	47P 50
C205	ECKD1H223PF	0.022 50
C206	RCBS1H150JCY	15P 50
C208	ECEA0JU101	100 6.3
C209	ECEA1EK4R7	4.7 25
C210	ECKD1H223PF	0.022 50
C211	ECKD1H223PF	0.022 50
C212	ECKD1H223PF	0.022 50
C213	RCBC1H101KBY	100P 50
C214	ECEA1CKS100	10 16
C215	ECKD1H103PF	0.01 50
C216	ECEA1HKR47	0.47 50
C217	ECEA1HK010	1 50
C220	ECEA1CKS100	10 16
C222	ECFTD473KXL	0.047 25
C225	ECCD1H180KC	18P 50
C226	ECKD1H103PF	0.01 50
C227	ECEA1CKS100	10 16
C230 (EI)	ECKT1H471KB	470P 50
C301	ECEA1CU101	100 16
C302	ECEA1HKR47	0.47 50
C303	ECEA1HK010	1 50
C304	ECEA1VK3R3	3.3 35
C305	ECEA1VK3R3	3.3 35
C306	ECEA1VK3R3	3.3 35
C307 (EX, EH, XA) (XL)	ECFTD153KXL	0.015 25
C308 (EX, EH, XA) (XL)	ECFTD153KXL	0.015 25

Ref. No.	Part No.	Value.
C310	ECFTD473KXL	0.047 25
C311	ECQP1471JZ	470P 125
C312	ECEA1CKS100	10 16
C313 (EI)	ECBT1H102KB5	0.001 50
C313 (EX, EH, XA) (XL)	RCBS1H181KBY	180P 50
C314 (EI)	ECBT1H102KB5	0.001 50
C314 (EX, EH, XA) (XL)	RCBS1H181KBY	180P 50
C321 (EI)	ECEA1CK100B	10 16
C323 (EI)	ECFTD332KXL	0.0033 25
C324 (EI)	ECFTD332KXL	0.0033 25
C325 (EI)	ECCT1H330KC	33P 50
C329 (EI)	ECFTD392KXL	0.0039 25
C330 (EI)	ECFTD392KXL	0.0039 25
C701 (EI)	ECEA1CU222	2200 16
C701 (EX, EH, XA) (XL)	ECEA1EU102	1000 25
C702	ECEA1EU102	1000 25
C704	ECKD1H102PF	0.001 50
C705	ECEA1CU221	220 16
C707	ECKD1H102PF	0.001 50
C710 ⚠	ECKD2H102ZF	0.001 500
C711 ⚠	ECKD1H103PF	0.01 50
C715 ⚠	ECKWNS103ZVS	0.01
C716	ECEA1VU101	100 35
C717	ECKD2H102ZF	0.001 500
C718	ECKD1H103PF	0.01 50
C719	ECEA1VU101	100 35
C720	ECKD1H102PF	0.001 50
C725	ECEA1VK100B	10 35
C726	ECEA1VK3R3	3.3 35
C912	ECEA0JS102	1000 6.3
C913	ECKD1H103PF	0.01 50
C914	ECEA0JS102	1000 6.3
C915	ECEA1HKR22	0.22 50
C916	RCBC1H101KBY	100P 50
C917	RCBS1H121KBY	120P 50
C925	ECKD1H223PF	0.022 50
C928	ECFTD392KXL	0.0039 25
C928 (EI)	ECFTD392KXL	0.0039 25

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